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An Ecological Analysis of Residential Break and Enter in Ottawa: The Pilot Project

Paul K. Ingram

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Summary

The main objective of this thesis was to provide specific knowledge of residential break and enters in Ottawa and Vanier from which various policies and strategies could be developed by the Ottawa Police Force to combat this crime. This thesis acted as a test pilot project in order to bring to the attention of management level officers within the Force the availability and potential of such information. It was hoped that this thesis would stimulate a more informed discussion about the possibilities of preventing or reducing residential break and enter through such analyses.

Baldwin et al. (1976) suggest that the understanding of a phenomenon usually depends first on the accurate description of it, including where and when the phenomenon most often occurs. Ecological research has been regarded as a means to an end, in that it can provide explanations and meanings of the phenomenon studies. Three aspects of ecological research were used through the course of this thesis. An areal study of residential break and enter was conducted to focus on the patterns of distribution of this crime throughout the cities of Ottawa and Vanier. The occurrences were spatially determined through the use of dot maps. The areal information was then aggregated using two units for analysis: City of Ottawa/Vanier and each of the four Ottawa Police districts. Crime-specific information was displayed and discussed

using these aggregate units.

The third aspect of ecological studies involved the analyses of units/districts within the city with a disproportionate share of offences. The areal analysis identified clusters of offences within the city and an ecological analysis of these clusters, involving such objective measures as demographic, socio-economic, and living conditions were used to demonstrate their environmental correlates. The second objective of this thesis was to determine if there were concentrations of residential break and enters in the city and if so, what were the characteristics of these areas and why were they at high risk?

The data source involved 950 residential break and enters reported in the Ottawa/Vanier area between February 1, 1987 and April 30, 1987. The coded summaries were manipulated using a statistical software package created by the Ottawa Police Force Computer Services Section. Frequency distribution tabulations were completed, for the four police districts and the Ottawa Area, for the following categories of information: day of week, portion of week, time of day, type of structure, point of entry, and mode of entry. Descriptive analyses were then completed for the frequency distributions, making summarizing statements for the common elements.

During the test period break and enters took place most frequently on Monday's and Friday's in the Ottawa

Area. The frequency analysis of the time of day data revealed that break and enters was a daytime phenomenon. The cross tabulations for the variables time of day by portion of week indicated that break and enter appeared to be a weekday/daytime, weekend/evening phenomenon in the Ottawa Area.

A review of the type of structure data revealed that single family dwellings appear to be the most frequently selected target for break and enters in the Ottawa Area, however, the distribution of break and enters was not in proportion to the residential composition of the Ottawa Area. Front doors were the most frequently reported point of entry in the Ottawa Area during the test period. Forced or pried was the mode of entry most frequently reported during this period of time.

At the end of the test period, three units were identified as having a 'high' break and enter rate, as defined by the researcher. These areas were then compared with 'low' areas, considering some of the demographic factors which have been shown to be associated with residential break and enter. Using such offender-related variables as proximity to public housing, low income, and population density it was illustrated that the High areas possess characteristics which contribute to the formation of an offender population. A weak association between area affluence and a high rate was found in this analysis. Proximity to an offender and affluence of the area were

identified as factors associated with the break and enter rates during this test period.

The third and final objective of this thesis involved recommendations for changes to and introduction of new strategies for combating residential break and enter. Policy Recommendations I and II focused on the offender and offender population. Policy Recommendation III was directed more towards the Regional Municipality of Ottawa Carleton and their policies regarding low income/offender population housing projects. Policy Recommendation IV suggested that the Ottawa Police Force's existing Neighbourhood Watch program should be extended to include all types of dwellings. Policy Recommendations V (surveillance level of points of entry) and VI (closer scrutiny of reports by supervisors) are aimed at obtaining more information to assist in furthering strategies to combat break and enter.

Policy Recommendation VII urges the establishment and continued use by the Ottawa Police Force of break and enter analyses performed in this thesis. Operational Recommendations I and II will act as an extension of Policy Recommendation VII, recommending the use of frequency and chi-square analyses and modus operandi information by the various sections of the Ottawa Police Force in the attempts to reduce and deter residential break and enter.

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Table of Contents

LIST OF TABLES

PAGE

PAGE

LIST OF FIGURES

LIST OF CHARTS

1

INTRODUCTION

Ecological Analysis

The identification of crime and of criminals, with particular environments within cities, is a long-established practice in criminology. The existence of a variety of environments within cities is a recognized fact among urban scholars. Attempts to relate crime rates to areas (and to forms of urban environments) and to examine their distributional qualities dates back to the 1830's in France. The 'cartographic' school of criminology, as it came to be called, used maps to display regional variations in crime rates. Ecological associations formed part of the analysis. The relationships of crime rates were measured and discussed with other indicators of the social condition (Davidson, 1981; Herbert, 1982).

In 1833, A.M. deGuerry used a series of annual reports to analyse French crime patterns and discovered consistent regional differences which were influenced by seasonality. Guerry also considered the influence on crime of level of education of the population and population density (Herbert, 1982).

A variety of different disciplines have involved themselves in the area of ecological studies. Within the discipline of Sociology two main traditions have arisen. The first has been described as an 'urban ecology' tradition, which focuses on the areal distribution of ecological variables. The second, the 'eco-system'

tradition, focuses on the interrelation and interdependence of a species within a common environment. The 'eco-system' tradition views individuals as being involved in a process of competitive cooperation. The process of human nature interact within the limitations and physical geography of their environment to produce distinct areas within a city (Cartwright, 1969).

Within the discipline of Criminology, studies in the ecological tradition focus on the socio-economic conditions of people and relate the variability in these conditions to the spatial irregularities in crime occurrence. Space exists as a fixed quantity in ecological criminology. Ecological analyses of crime data looks at the relationship of locations with other urban or social characteristics (Brantingham and Brantingham, 1984).

Since the early accomplishments of Guerry there have been two main sets of contributors to the development of ecological analyses as a recognized form of research - the Chicago School and the modern factor analysts.

i) Chicago School

The work of Clifford Shaw and Henry McKay regarding juvenile delinquency in Chicago provided a series of generalisations about urban social structures. They identified that clear and obvious differences within cities existed over a wide range of variables, including the land-use, physical conditions and demographic structure of

neighbourhoods. Their most significant observation was the arrangement of many of these variables into what have been called concentric zonal models. That is, zones with high population densities and physical deterioration in the centre and low density and better conditions on the periphery. (Davidson, 1981).

Shaw and McKay also contributed to the 'method' of ecological analysis by developing the process of grouping individuals into a network of areas or grids and calculating rates for each area for the purpose of analyses. Using these aggregate patterns, associations of various phenomena could be described through visual and statistical correlation. The understanding of urban environments may not have been possible without the generalizing power of aggregation. (Davidson, 1981).

Shaw and McKay applied this method to delinquency data derived from court records and other sources. They found that delinquency rates decline markedly from the city centre to the periphery. This pattern was found to be consistent over a number of time periods. Shaw and McKay correlated delinquency rates with housing, income levels, demographic stability and ethnic status.

ii) Modern Factor Analysis

Although the impact of this group is less evident there is considerable literature on the distribution of crime using factor analytic methods. In short, this method

involves the application of multi-variate statistical techniques, which allows simultaneous consideration of a number of indices of crime and social conditions. Davidson (1981) outlined one such example of this form of study in his description of B. Lander's analysis of crime rates in Baltimore. Lander initially selected seven indices: education, rent, home-ownership, sub-standard housing, overcrowding, non-whites, and foreign born. All were highly correlated to delinquency, some more significantly than others. Using multiple regression and partial correlation analyses, Lander suggested that proportion of home-ownership and non-whites were most significant. Further, he used factor analysis to show that anomie rather than socio-economic status was the major indicator of delinquency.

Residential Break and Enter

Waller and Okihiro (1978) suggest that further studies into the prevention or reduction of crime should examine the complete circumstances of a specific type of event rather than further examination of the offender or the criminal justice system itself. It is the intention of this thesis to do just that, through an ecological analysis of residential break and enter, in an attempt to stimulate a more informed discussion on the possibilities of preventing or reducing residential break and enter.

Subsection 348(1) of the Canadian Criminal Code defines break and enter as

> Everyone who:
>
> a) breaks and enters a place with intent to commit an indictable offence therein,
> b) breaks and enters a place and commits an indictable offence therein, or
> c) breaks out of a place after
> i) committing an indictable offence therein, or
> ii) entering the place with the intent to commit an indictable offence therein

The definition includes both those occurrences in which an individual broke and entered a place and those in which the suspect attempted to break and enter a place. For the purpose of this thesis, 'place' will only include residential premises.

A review of the literature on previous studies of burglary or break and enter will be completed in order to provide the reader with some background information on this subject. The literature review chapter will include a discussion on the limitations of the use of police-recorded data, patterns revealed in previous break and enter studies, and factors found to be associated with break and enter rates.

Break and enter is in some respects more commonly referred to as burglary. This may be due in part to the influences British and American studies and media depictions have on Canadians. Both terms will be used when

discussing the literature review. However, the Canadian term 'break and enter' will be maintained throughout the remainder of the thesis. The use of this phrase may be rather awkward; however, the reader can be certain reference is being made to the Canadian Criminal Code definition when the term 'break and enter' is used.

The data for this ecological analysis will be drawn from the occurrences reported to the Ottawa Police Force over a three month period during 1987. The Ottawa Force is made up of approximately 625 sworn officers and it polices a population of over 320,000 people. The modus operandi information from the occurrences, regarding 'where, when, and how', will be summarized and coded and a descriptive analysis will be completed for the patterns that are revealed. A descriptive analysis will be completed for the residential break and enters reported in each of the four Ottawa Police Force patrol districts, in addition to the city of Ottawa on the whole. As well, demographic characteristics will be reviewed for those areas within the city which display spatial irregularities.

These analyses will provide specific knowledge of residential break and enter in Ottawa and Vanier, from which strategies could be developed by different sections within the Ottawa Police Force to combat this crime. This thesis will act as a 'pilot project' to demonstrate to the Ottawa Police Force the potential for ecological studies.

More knowledge of and a better understanding about residential break and enter, and its frequency and distribution, are essential to the development of policies and strategies. The final chapter of this thesis will outline several recommendations and conclusions on residential break and enter based on the findings of this thesis.

2

LITERATURE REVIEW

Introduction

In recent years a number of studies have been undertaken to address the crime of burglary. Just as there are many studies on burglary, there are also many strategies for studying this crime. Basic to the study of some crimes are the patterns revealed in police-recorded data. Maguire (1982) reviewed over 6000 burglary reports in the Thames Valley area of England in an attempt to develop a clear picture of this crime, thereby dispelling the exaggerated notions and misconceptions that the public have of burglary. Maguire used interviews with investigating police officers, convicted offenders, and burglary victims to further establish the patterns revealed through the police-recorded data.

Worrell and Sparkes (1980) also focused on crime patterns in their study of residential 'vandalism' in Thunder Bay. They included wilful damage, mischief, break and enter, theft, and damage to residences in their definition of vandalism. They attempted to show how residential areas with higher and lower rates of vandalism differ and how residents of such areas increase or decrease their own vulnerability. Worrell and Sparkes used police-recorded data to determine which areas had high or low rates of vandalism and were mainly concerned with the patterns revealed from these data. Like Maguire's (1982), Worrell and Sparkes' work was guided by the patterns of

crime. Both studies are concerned with describing characteristics of criminal occurrences in terms of temporal and spatial patterns. They both were involved in discovering the facts of criminal events.

Based on analyses of patterns, explanations of how things happen and rules of relationship can be made. Scarr (1973) studied the patterning of burglary incidents in Washington in an attempt to understand the behaviour of burglars. Scarr described the rate and frequency of burglary in conjunction with census characteristics. He also interviewed victims and non-victims as well as a limited number of offenders and criminal justice system personnel as part of his approach to understanding this particular kind of criminal behaviour.

Walsh (1980) also focused on understanding the psychology of the individual burglar in his study of Exeter police reports. He attempted to draw a relationship between burglary and other forms of crime and also to the wider structure of society. However, Walsh's methodology was rather suspect. His study was rather weak in empirical data and his findings were highly speculative. His attempts to make explanations from facts were based on 100 anecdotal interviews with convicted burglars and a small sample of Exeter victims and non-victims.

Carl Pope (1977 a+b) conducted an extensive study in six police jurisdictions in the United States, that was

also concerned with the patterning of both offence and offender characteristics. His first report, Crime Specific Analysis: An Empirical Examination of Burglary Incidents, dealt with various characteristics associated with the commission of burglary. In the second phase of his study, Pope provided an analysis of the social and legal characteristics of those arrested for burglary. His study, which involved over eight thousand police reports and approximately two thousand interviews with apprehended burglars, is one further example of attempts made to better understand offenders and criminal behaviour.

Waller and Okihiro (1978) were directed by their concern for the victims of burglary in their study of Toronto. They examined the causes of burglary and how it can be prevented. They focused on what burglary involves, where it occurs, what its effects are, and the victims' reactions to the crime. They reviewed police records and conducted interviews with a random sample of households (both victims and non-victims).

Reppetto's (1974) twenty-one month long study of Boston robberies and burglaries was also prevention-oriented. The main goal of his study was to design more effective control strategies for residential crime by examining the nature and pattern of common crimes committed in and around residential properties in urban and suburban areas. Reppetto included police reports,

household surveys (victims and non-victims), and interviews with burglars in his attempt to create control strategies. Reppetto focused on both incident patterns and criminal behaviour in his approach to prevention.

Winchester and Jackson (1982) conducted a study of Kent (England) burglaries, which was aimed at reducing residential burglary. They considered issues of relevance to 'target-hardening policies' in their review of close to five thousand occurrences. They also conducted interviews in a random sample of general and victimized households. Ross (1977) was also concerned with target-hardening policies. He suggested that by reviewing patterns of crime one would be able to determine what conditions lead to the commission of an offence. By reducing or eliminating these identified conditions one could decrease an individual's vulnerability, thereby protecting the individual. His study involved a review of crime occurrence information in Metropolitan Toronto police reports.

Three main focuses are evident in this brief discussion of burglary studies: i) patterns of burglary, ii) offender characteristics, and iii) crime prevention. Studies of burglary patterns can be used as the first step in understanding this crime. Studies focusing on offender characteristics and crime prevention are attempts to explain the crime of burglary. As noted earlier, based on

statements of facts, provided in part by the patterns revealed, explanations and relationships can be established about burglary.

Police - Recorded Data: limitations

Before we discuss the patterns of and factors associated with burglary, this chapter will first address some concerns surrounding the use of police-recorded data. All ofthe major studies dealing with 'burglary' have used police-recorded data at one point or another in their analyses (Waller and Okihiro, 1978; Reppetto, 1974; Scarr, 1973; Maguire, 1982).

i) Waller and Okihiro (1978) point out that there can be a problem when comparing the burglary rates from one jurisdiction to the next. The main concern they cite involves the definitional differences. Waller and Okihiro consider what they refer to as 'burglary' in their study of Toronto. Included in this broad category are break and enter, robbery, theft over and under $50., and malicious damage to a residence. Reppetto's (1974) Boston-based study dealt with robbery and burglary. Unlike Waller and Okihiro, Reppetto's definition of burglary was one separate offence defined as the break and entering of a dwelling or non-dwelling with the intent to commit a felony. Worrell and Sparkes (1980) deal with all residential property crime in their analyses of Thunder Bay crime rates, but make

references to studies dealing with just burglary.

Despite the differences in terminology and definitions, various studies can be compared. Scarr (1973) notes that even though 'burglary' may vary greatly along a continuum, certain regularities do appear and can be identified through the analysis of data from occurrence reports. Whether the offence is termed a burglary or a break-in, it will have a time, a place, and most likely a point of entry. There are a number of constants in occurrences that can prcvide useful information. However, limitations created by the differences in definitions must be acknowledged.

ii) Notwithstanding these limitations, there is the concern that the definitions used in particular studies are too broad or all-encompassing. Combining two or more offences, that may not naturally be placed together, may cloud the findings of the study.

This might be said of Waller and Okihiro's (1978) term 'burglary'. As noted earlier they included break and enter, robbery, and wilful damage to a residence in their study. Are individuals who commit break and enters different from robbery suspects? Are the characteristics of these offences not different, thereby warranting two separate categories?

Reppetto (1974) indicated that the method of operations, planning, time of day, and objectives were

different for robbery and burglary. Thus, it would be a mistake to lump the two offences into one category. It is not the purpose of this paper to determine if robbery and burglary are similar. The difference between the two has been pointed out in recognition of a limitation of comparing various ecological studies.

iii) Police-recorded rates do not reflect accurately the true crime rates in an area. Victimization surveys have indicated that this is the case in both Canada and the United States. There are a number of reasons why victims of crimes do not report such occurrences to the police. It has been suggested that perhaps the victim believes it is a trivial matter or that he/she believes the police will think it is a trivial matter. Waller and Okihiro (1978) note that one of the main reasons people report burglaries to the police is the fact that insurance companies require official reports before the victims can make claims. They suggest that this may lead to distortion in the reporting of the facts of the offence to the police. Pope (1977a), in his review of burglary incidents, noted that eighty-five percent of all reported residential burglaries resulted in monetary loss of some type. This should not be surprising since, as already stated, victims often report their occurrences solely for insurance purposes.

iv) Police recording practices can also have an

effect on reported crime rates. It may appear that commercial break and enter rates have declined, when in effect the number of reported incidents has risen but the police have reclassified these incidents under other crime categories. A reported attempt break and enter might be reclassified as a damage to property despite the victim's insistence. Bottomley and Coleman (1981) stress that the proportion of reports which are eventually reclassified by the police is relatively small and in many cases represents an entirely sensible assessment of the circumstances of the case. Maguire (1982) notes that the failure of victims to report is more significant than police discretionary methods in identifying how many burglaries actually take place. Therefore, although recording procedures might limit the value of police-recorded rates, it would appear the overall effect is minimal.

Brantingham and Brantingham (1984) in their discussion of the use of personal accounts in research, note that by themselves personal accounts, are insufficient sources of information about crime, criminality, or the criminal justice system. Problems of representativeness, comparability, and validity can be overcome through the use of additional data sources. This also may be the case for police-recorded data. As noted earlier, researchers have employed various methods to overcome potential problems caused by the limitations of police-recorded data. Studies

of residential crime completed in recent years have set the ground work for future research. Based on their findings and experiences new studies can be approached with greater confidence.

Patterns of Residential Burglary

The purpose of this section is to give the reader a basic overview of residential burglary patterns. Although there is no consensus on the patterns of residential burglary, certain regularities have been identified in recent studies of this crime. Location of burglaries is the primary focus of almost all burglary studies. Paul and Patricia Brantingham (1981) state that crime involves four elements - law, the offender, the target, and the place. Environmental criminology is a study of the fourth dimension. Place is a discrete location in time and space where the other three dimensions intersect and a criminal event occurs. Environmental criminologists begin their enquiries by asking where and when the crimes occur and concern themselves with the spatial distribution of targets and offenders within differing environments. Specific individual occurrences provide a limited amount of information. It is the grouping or aggregation of individual occurrences in specific locations that is of greatest value to researchers.

Scarr (1973), in his review of Washington area burglary rates, noted that there was no significant difference in the number of burglaries from Season to Season. He examined seasonal change by grouping the year into cold, mild, and hot weather months. On the other hand, Maguire (1982) discovered that overall, the mid-winter months (most notably December) produced more burglaries than the summer months. Further still, Walsh (1980) identified both a cold weather (January/February) and a warm weather (July/August) peak in residential burglaries.

The findings for Day of the Week were as varied as the seasonal comparisons. Numerous studies (Scarr, 1973; Reppetto, 1974; Waller and Okihiro, 1978) have suggested that residential burglary is a weekday occurrence. On the other hand, Maguire (1982), Walsh (1980), and Conklin and Bittner (1973) discovered that more residential burglaries were committed on Saturday and Sunday. Maguire (1982) also noted that Thursday appeared popular with Thames Valley (England) burglars. He suggested that this is due to the fact that most people are paid on Thursday and thieves consciously choose Thursday because they know there is likely to be more money in the residences.

As difficult as it is to define the term burglary, establishing the Time an occurrence took place is as elusive. Aside from the difficulties that arise due to

differing definitions of time categories, often the victims are not able to provide very specific information. Police records in Toronto indicate burglary is spread equally over the daytime, evening, and night time. Waller and Okihiro (1978) found in their victim survey that burglaries were greatest during the night time. This was supported by Walsh (1980) in his study of Exeter. Walsh noted that burglary was fairly evenly spread throughout the year, but that there were two apparent peaks. Twenty percent of the year's burglaries took place during the months of January and February. His explanation for this peak was that it gets darker earlier in the evening during these months, offering the burglar greater invisibility and more information on the presence or absence of residents i.e. lights. For this period of time, burglary was a night time phenomenon. Conklin and Bittner (1973) suggested that burglary occurrences vary in time due to the vacancy patterns of the targets and, what they too refer to as, the 'increased invisibility' at certain times of the day that offenders use to their advantages.

Still other studies (Scarr, 1973; Reppetto, 1974; Maguire, 1982) have suggested that burglary is a daytime occurrence. Burglars interviewed in Walsh's study indicated that the exact time of day they burgle depends, to some extent, on the season and also on the type of house to be burgled. It would appear that 'day of the week' also

affects the time of burglary incidents. Maguire (1982) discovered that daylight offences out-number darkness offences by a two to one margin during the week. The reverse was the case on the weekend.

In general, burglars do not confine themselves to one Type of Dwelling but do, for one reason or another, have personal preferences (Walsh 1980). Reppetto (1974) indicated that the age of the burglar has a bearing on the type of dwelling selected. Despite these preferences all types of dwellings were equally represented in Walsh's Exeter victim survey. Ross (1977) identified one particular pattern in relation to the type of dwelling in his study of Toronto break and enter rates. He noted that the greater the proportion of apartments in an area, the greater the occurrence of break-ins. Reppetto (1974) suggested that type of dwelling chosen may be less a result of structure than other factors, such as location.

Point of Entry and Method of Entry are two complementary elements that are of interest in most, if not all, studies on residential burglary. Studies have indicated (Pope, 1977a; Reppetto, 1974; Scarr, 1973; Waller and Okihiro, 1978) that the methods of entry employed by a majority of residential burglars are relatively unsophisticated. This is consistent with the belief that most burglaries are committed by young and/or inexperienced individuals. Pope (1977a) discovered that forcible entry

was used in sixty-two percent of the burglary reports reviewed from six police jurisdictions. Reppetto (1974) suggested that burglars are more likely to pry doors or break windows than to use more sophisticated methods such as picking locks or cutting glass. As to be expected, most burglaries are committed either through a door or a window (Pope, 1977a; Waller and Okihiro, 1978).

In Waller and Okihiro's (1978) survey of residential burglary victims, fifty-nine percent of the victims had something Stolen. Half of these people had money stolen. Reppetto (1974) noted that the need for money was the prime motive of the convicted burglars he interviewed. In England alone, between 1973 and 1979, insurance payments in respect to burglary rose by more than 500 percent (Maguire, 1982).

One issue of great concern to victims, the police, and researchers is the Degree of Damage committed by offenders. Waller and Okihiro (1978) found that, in general, residential burglary in Toronto involves little damage or disarrangement of property. Thirteen percent of the victims surveyed indicated their possessions had been extensively disarranged. Maguire (1982) noted that in only 0.8% of the 6484 Thames Valley police reports analysed, damage incidental to the main offence was reported. Only 0.3% reported that a 'nuisance' had been committed, (i.e. the offender defecated, masturbated, urinated, or

vomited). Maguire noted that it has been suggested that burglars perform such acts to bring good luck. Burglars Maguire interviewed stated that such occurrences were deliberate, malicious acts and just that.

Based on this researcher's experience as an investigating officer, albeit limited, and from discussions with residential break and enter investigators, these forms of malicious acts are frequently associated with burglaries in which the offender knows his/her victim. The act is committed as a deliberate act of vengeance. In a large majority of burglaries, it is the burglar's intention to get in and out of the residence as quickly as possible. As Maguire (1982) notes, disarrangement of property is generally brought about only by haste, with no deliberate intent.

Factors Associated with Residential Burglary

Particular patterns are identified in many of the studies discussed above. This section involves the association of various factors to these patterns in an attempt to understand residential burglary. Waller and Okihiro (1978) focused on three interlinked concepts of burglary causation in their study of Metropolitan Toronto residential burglaries. These three concepts of burglary causation will be used to direct discussion in this section of this paper.

The first concept, 'crime as opportunity' deals with those factors related to the socio-physical characteristics of the residence. This section will consider such factors as the degree of occupancy, surveillance level of the residence, and home security.

The second concept is referred to as 'crime and opportunity'. This concept of burglary causation is concerned with the factors related to the presence of potential offenders. Such factors as proximity to public housing, proximity to multi-land use site, and age composition of the area will be discussed.

The third concept, 'crime of opportunity' will deal with the factors relating to the availability of goods to be stolen and the affluence of neighbourhoods.

I) Crime as Opportunity

a) Degree of Occupancy

The degree to which a residence is left unoccupied has been suggested in numerous studies (Scarr, 1973; Reppetto, 1974; Waller and Okihiro, 1978; Walsh, 1980; Worrell and Sparkes, 1980; Maguire, 1982; Winchester and Jackson, 1982) as a major determinant of residential burglary. It has been suggested that when someone is home most of the time, the house is less likely to become a target for a break-in. Burglars like to avoid confrontations and therefore select homes that are or

appear to be unoccupied. Convicted burglars interviewed by Maguire (1982) indicated that occupancy was a factor associated with the selection of a target.

Police-recorded data analysed by Reppetto (1974) confirms burglars' reluctance to confront householders. In 92% of the cases studied by Reppetto, the homes were unoccupied at the time of the occurrence. Winchester and Jackson's (1982) analyses of the Kent police force burglary occurrences indicated that in all, eighty percent of the homes were unoccupied at the time of the burglary. This translates into 81% of all daytime burglaries and 94% of all evening burglaries. Seventy-eight percent of all homes were occupied during night time burglaries, however, this represents only fifteen percent of the total number of burglaries analysed.

Reppetto's (1974) household survey in the Boston area indicated that those who left their homes unoccupied for substantial portions of time would experience significantly greater victimization than those who spent relatively more time at home. This was also the case in Worrell and Sparkes' (1980) analyses of residential property crime in Thunder Bay. They found that fewer households in the 'low' vandalism area were vacated on a daily basis for any length of time, than houses in the 'medium' and 'high' vandalism area. In the high vandalism area, households were vacated for 2-4 hours more per day

than households in the other areas.

The Winchester and Jackson (1982) study also revealed that the pattern of occupancy is also different between victims and nonvictims. They discovered that victims' homes were more likely to be unoccupied during the day, more likely to be unoccupied most or several evenings during a week, and more likely to be left empty for more than two weeks in the year. Winchester and Jackson note that the extent to which a residence is unoccupied is important not because burglars analyse patterns of occupancy of particular residents, but because it increases the chances that a burglar, who selects a residence as a target based on other factors, will find the home empty. Worrell and Sparkes (1980) suggest that if the period of time a household is vacant is expected to have any effect on the residential area's vandalism rate, it may only do so when there is a relatively large number of households within a given area which are seldom or never vacated on a daily basis, for any period of time.

b) Surveillance Level of Residence

In addition to what has been suggested above, in order for the rate of occupancy to have an effect on an area's burglary rate the entries to potential target homes must be visible. Reppetto's (1974) survey of Boston area burglars revealed that forty-four percent base their choice of a target on the ease of access to the home. Victim

homes in Winchester and Jackson's (1982) survey of Kent area households were likely to be distant from other houses. They tended to be further set back from the roadway, obscured from public view. The findings revealed that access and surveillance factors put some homes more at risk than others.

Waller and Okihiro (1978) measured the 'surveillability' of houses using a number of criteria. They considered the distance of the front door from the street and the presence and magnitude of obstruction of the front door. The distance of side doors and/or windows to next door neighbours and the possibility of obstructions on the side of the houses were also considered. The visibility of points of entry was one further criterion included in the measure of surveillance level.

The results revealed that 59% of victims' homes were considered hard to supervise as compared to 36% of the non-victims' homes. These findings emphasize the importance of visibility of entries as a factor associated with residential burglary rates.

c) Home Security

One would think that if security hardware presented itself as a problem to a burglar he/she would choose unprotected houses. Winchester and Jackson's (1982) comparison of victim and general households did not suggest that victim homes were less secured. Both groups were less

likely to leave a home insecure when it was unoccupied. Neither was any less likely to have installed security devices. Twelve percent of the victim homes were found to have 'good' security compared to seven percent of the general household sample. The security of victim households was no lower than average in the study area than the general household sample.

Waller and Okihiro (1978) found that many homes in their household survey of victims and non-victims took no precautions. Special precautions taken only marginally distinguished victims from non-victims.

Gabor (1981), in his assessment of the property-marking theft prevention program called Operation-Identification, revealed that there was a distinct difference in the victimization rates of participants and non-participants. He attributed the effectiveness of the program to the initial differences in vulnerability between participants and non-participants.

In general, factors of occupancy and surveillance appear to be more important in explaining patterns of victimization than levels of household security. Houses with good locks and bolts but situated in high-risk position from the point of view of easy and unnoticed access are more likely to be burglarized than homes with little security which are less conveniently sighted from a burglar's point of view (Maguire, 1982).

The factors discussed in this section are aspects of a concept known as defensible space. This concept, popular with crime prevention advocates, assumes that residents can be a critical force in providing security in their neighbourhood. Residents come to believe that they have an exclusive right to protect their home environment, (Bevis and Nutter, 1978; Waller and Okihiro, 1978). The inter-relationship of such factors as occupancy, surveillance level, and home security have been shown to reduce the likelihood of victimization, thereby defending the space.

II) Crime and Opportunity

a) Proximity to Public Housing

Social and economic factors have been frequently cited in research as contributing to the formation of a criminal population. An assumption exists that areas with, or close to, large criminal populations will sustain correspondingly high crime rates. It is obvious then that some areas will be more vulnerable than others. High crime rates will correlate with characteristics of neighbourhoods which produce or attract residential criminals (Reppetto, 1974).

Waller and Okihiro (1978) suggest that nearness to public housing is seen as an offender-related variable, since most arrested offenders are seen as coming from lower

socio-economic environments.

Police records analysed by Reppetto (1974) revealed that the average annual burglary rate of low income neighbourhoods was slightly greater than one and one half times that of middle income neighbourhoods and three and one half times that of upper income neighbourhoods. This supports the belief that high crime rates correlate with areas with large criminal population and environments with low socio-economic status.

Waller and Okihiro (1978) found that fifty percent of the victim homes were situated in or near public housing compared to twelve percent of the non-victim households. Scarr (1973) found a positive correlation between each of percent roominghouse, percent overcrowded, percent lower-cost housing and the residential burglary rate. Each of these variables is generally associated with areas of low socio-economic status. A high burglary rate has been shown to be associated with the presence of a higher proportion of disadvantaged people.

A fairly strong association has been found between offender rates and offence rates (Reppetto, 1974; Waller and Okihiro, 1978; Maguire, 1982). Those areas where proportionately more burglaries occur also produce the highest number of offenders in relation to the population. It is possible that the police devote more resources in observing and investigating the activities of individuals

in lower-class areas than elsewhere, thereby distorting the true distribution of burglars. Maguire states that although the argument of differential treatment has some merit, he believes there is not sufficient evidence to disprove the claim that burglary is committed predominantly by individuals of the lower socio-economic groups.

An opinion exists suggesting that criminal offences committed by middle-class youths are not brought to the attention of the police due to the differential handling of middle-class offenders by parents and other individuals within the community. Vaz (1965) found that approximately five percent of the middle-class adolescents surveyed in his study of self-reported juvenile delinquency admitted to having broken into or attempted to break and enter a building with the intent of stealing. However, in later writings, Vaz (1976) suggested that no substantial evidence exists that would indicate that "the same quality of delinquency or crime is proportionately distributed among the social classes" (p. 114). Although middle-class youths may admittedly be involved in more break and enters than police records reveal, the frequency of their involvement and the nature or type of crime may be more limited than those in lower social classes.

b) Age Composition of Area

As much as residential burglary is associated with the socio-economic status of an area, it is also considered

to be a crime of youth. As has been previously stated, the relatively unskilled method of operation of residential burglars in general is consistent with the belief that youths are committing a majority of all residential burglaries. Data obtained from the records of 1196 apprehended burglary offenders in six different police jurisdictions revealed that eighty-two percent of these offenders were under 25 years of age. Of these, 51% were under 18 years of age and 49% were over the age of 18 years (Pope, 1977b). Maguire's (1982) interviews with adjudicated offenders revealed that almost half (48%) were under the age of 17 years. Maguire suggested that many of the individuals who commit burglaries are simply passing through a phase in life, which accounts for their involvement in residential burglary. Whether this is a 'phase' or not, it is evident that the age composition of an area is associated with the burglary rate. A positive correlation would exist between the percentage of youth in an area and its residential burglary rate.

c) Mobility of Offenders

If we accept that the greatest proportion of our offender population is comprised of young individuals from lower socio-economic environments, we can also assume that in general, the mobility of our offender population is also low. This has been shown to be the case in several studies on residential burglary. Walsh (1980) found that of the

burglars he interviewed most lived a distance of up to two miles from the last home they burgled. Over one half (52%) of the apprehended burglars interviewed by Pope (1977b) stated that they travelled one mile or less to commit their last burglary. Maguire (1982) however, questioned such findings, stating that such studies were based on caught or detected offenders. He suggested that it may be that those who burgle close to home are easier to catch than those who travel from where they were known, thus exaggerating the extent of the 'local' burglar theory.

Gabor (1984), in his study of the mobility for Ottawa offenders, found that approximately twenty-five percent of his sample were considered to be transients. The average distance that offenders, with fixed residences in Ottawa, travelled to the crime site was over one mile. Gabor revealed that the nature or type of offence was a variable found to determine the distance travelled by 'in-towners' to commit their crimes. In-town break and enter offenders travelled a mean distance of 0.35 miles to commit their offences.

d) Multi-land use Sites

Worrell and Sparkes (1980) studied the effect of the presence or absence of various facilities in, or adjacent to, residential areas on the vandalism rate of each area. They suggested that these facilities are often targets of damage and thefts themselves, but the proximity

of businesses, schools, and churches may contribute to the higher or lower vandalism rates in the residential area. Residents in an area near a church may take for granted the comings and goings of strangers in the area and neglect to observe potential or actual crime.

Their findings revealed that neighbourhoods located in proximity to multi-use land sites, which are designed to attract people at regular times, are more likely to experience high rates of property damage than neighbourhoods farther away from such attractions. Almost sixty-seven percent of all households in the high vandalism areas reported the presence of a mall or supermarket near their households. This was compared to 33.4% of the households in the medium vandalism areas and 37.8% in the low vandalism areas. There were slightly more restaurants in the high vandalism areas and slightly more churches in the medium vandalism areas, than in the low vandalism areas. A significantly greater number of households (58.6%) in the high vandalism areas have a public pool in or adjacent to their areas, compared to 33.9% in the medium vandalism areas and 18% in the low vandalism areas.

These findings indicate that there is an association between the presence of multi-use land sites and high vandalism rates. It is not known if this association would hold true for residential burglary rates alone. Further investigation into this possibility must be

undertaken before such a claim can be made.

In general, factors related to the presence of potential offenders can be used to understand residential burglary. Proximity to public housing, the age composition of the area, and the mobility of offenders are factors that are income or socio-economically based. In this section the factors discussed were shown to have a strong association with high burglary rates. The factor 'proximity to multi-use land sites' contributes to the presence of potential offenders, further establishing the concept of crime and opportunity.

III Crime of Opportunity

Affluence and Availability

As we have seen above, income is a factor in the formation of criminal populations. It can also be a factor in criminals' selection of targets. Low average income level appeared to contribute to the determination of a criminal population in high crime areas and therefore to the area's overall crime rate. On the other hand, a high income level may contribute to the attractiveness of the area as a target.

Reppetto's (1974) victimization survey indicated that victimization rates rise with income. In high crime areas and middle crime areas, upper income households within these areas appear to be victimized most

frequently. That is, in a high crime area with a low average income, households with upper incomes within the low average income group were more frequently victimized. This supports the idea that burglars tend to select the more affluent among available targets.

Boggs (1966) suggested that targets within areas of high socio-economic status that are adjacent to offender areas appear to provide an abundance of illegitimate opportunities. Burglars are more likely to be found in lower income neighbourhoods, but select more affluent targets outside their neighbourhoods. Waller and Okihiro (1978) found that sixty percent of their victims came from 'affluent' households compared to thirty-six percent of the non-victims. Upper income groups are as disproportionally represented as victims, as lower income groups are offenders. While it appears to operate as a factor in the development of a criminal population, the reverse may be a factor in the criminal decision making process. Upper income victims offer attractions to lower income offenders, making burglary a crime of opportunity.

Summary

Numerous studies have been conducted in recent years examining the crime of burglary/break and enter. The studies discussed in this chapter could be placed into one of three main types; those that focus on crime patterns, studies concerned with offender characteristics, and those that are oriented towards crime prevention.

This chapter outlined some of the limitations of the use of police-recorded data for the examination of break and enter. One problem that can exist is in the comparison of the burglary rates from one jurisdiction to the next, due to the variety of definitions of the crime of burglary. Despite the differences in terminology and definitions, various studies can be compared. Scarr (1973) noted that even though 'burglary' may vary along a continuum, there are a number of constants in all the occurrences recorded that can provide useful information. Whether the offence is termed a burglary or a break-in, it will have a time, a place, and a point of entry.

There is also the concern that the definitions used in particular studies are too broad or all-encompassing. Combining two or more offences, that may not naturally be placed together, may cloud the findings of the study.

The fact that police-recorded rates do not accurately reflect the true crime rates in an area was a

third limitation discussed. Victimization surveys in both Canada and the United States have indicated that this is the case. Police-recording practices have also been noted as having an effect on reported crime rates. The reclassification of occurrences by the police can have an effect on crime type rates. However, it has been suggested that the failure of victims to report incidents is more significant than police discretionary methods. Although recording procedures might limit the value of police-recorded rates, it would appear the overall effect is minimal. Police-recorded data can be used. The limitations, however, must be identified and acknowledged.

A review of the literature on residential burglary patterns revealed that although there is no consensus on the patterns, certain regularities have been identified in recent studies of this crime. Scarr (1973) indicated there was no significant difference in the number of break and enters reported from Season to Season. Maguire (1982) however, discovered that the mid-winter months produced more burglaries than the summer months. Walsh (1980) identified both a cold weather (January/February) and a warm weather (July/August) peak in residential burglaries.

The findings for Day of the Week were as varied as the seasonal comparisons. Numerous studies (Scarr, 1973; Reppetto, 1974; Waller and Okihiro, 1978) suggested that residential burglary was a weekday occurrence. While on

the other hand, Maguire (1982), Walsh (1980), and Conklin and Bittner (1973) indicated that more residential break-ins were committed on Saturday or Sunday.

Often victims are not able to provide very specific information on the Time of the occurrence. As well, some difficulties arise in comparing studies due to the differing definitions of time categories. Waller and Okihiro (1978) and Walsh (1980) found that night time burglaries occurred most frequently. Other studies (Scarr, 1973; Reppetto, 1974; Maguire, 1982) have suggested that burglary is a daytime occurrence. It was also noted that the season of the year and the day of the week, in part, determines the time burglaries are most likely to take place.

Reppetto (1974) indicated that the age of the burglar has a bearing on the Type of Dwelling selected. Ross (1977) noted that the greater the proportion of apartments in an area the greater the number of break-ins. Reppetto (1974) also suggested that the type of dwelling chosen may be less of a result of structure than other factors such as location.

Studies have indicated (Pope, 1977a; Reppetto, 1974; Scarr, 1973; Waller and Okihiro, 1978) that the Methods of Entry employed by a majority of residential burglars are relatively unsophisticated, which would be consistent with the belief that most burglaries are

committed by young and/or inexperienced individuals. Point of Entry is a complementary variable to method of entry. Reppetto (1974) indicated that burglars are more likely to pry doors or break windows than to use more sophisticated methods such as picking locks or cutting glass. As to be expected, most break-ins are committed either through a door or a window (Pope, 1977a; Waller and Okihiro, 1978).

Fifty-nine percent of the victims surveyed in Waller and Okihiro's (1978) study of residential burglary victims had something Stolen. Half of these people had money stolen. Money was the prime motive for committing burglaries for the convicted burglars interviewed by Reppetto (1974).

In general, Waller and Okihiro (1978) found that the Degree of Damage committed by offenders in their study was minimal. A very small percentage of the damage reported in break-ins is incidental to the main offence. In a majority of burglaries, it is the burglar's intention to get in and out of the residence as quickly as possible and with as little commotion as possible.

The next section of this chapter discussed the factors associated with residential burglary. The first group discussed were those factors related to the socio-physical characteristics of the residence and was called 'Crime as Opportunity'. The 'degree of occupancy' is one variable discussed in this concept. The degree to

which a residence is left unoccupied has been suggested in numerous studies as a major determinant of residential burglary (Scarr, 1973; Reppetto, 1974; Waller and Okihiro, 1978; Walsh, 1980; Worrell and Sparkes, 1980; Maguire, 1982; Winchester and Jackson, 1982). It has been suggested that burglars like to avoid confrontations, therefore, if someone is home most of the time, the house is less likely to become a target for a break-in.

'Surveillance Level of Residence' was a second factor discussed in Crime as Opportunity. In order for the rate of occupancy to have an affect on an area's burglary rate the entries to potential target homes must be visible. The findings revealed that access and surveillance factors put some homes more at risk than others (Reppetto, 1974; Winchester and Jackson, 1982; Waller and Okihiro, 1978).

In general, factors of occupancy and surveillance appeared to be more important in explaining patterns of victimization than the levels of 'household security'. Houses with good locks and bolts but situated in high-risk position from the point of view of easy and unnoticed access are more likely to be burglarized than homes with little security which are less conveniently sighted from a burglar's point of view.

A second group of factors discussed were titled '<u>Crime and Opportunity</u>'. These factors are related to the

presence of potential offenders. 'Proximity to Public Housing' was one factor that was discussed. Social and economic factors have been frequently cited in research as contributing to the formation of a criminal population. Areas with, or close to, large criminal populations will sustain correspondingly high crime rates. Therefore, some areas will be more vulnerable than others. High crime rates will correlate with characteristics of neighbourhoods which produce or attract residential criminals. A fairly strong association has been found between offender rates and burglary offence rates (Reppetto, 1974; Waller and Okihiro, 1978; Maguire, 1982).

Residential burglary is also considered to be a crime of youth. Therefore, the 'Age Composition of Area' could be a factor associated with residential burglary. A positive correlation has been found between the percentage of youth in an area and its residential burglary rate (Pope, 1977b; Maguire, 1982).

'Offender mobility' is another factor discussed in 'Crime and Opportunity'. If a majority of our offender population is comprised of young individuals from lower socio-economic environments, we can assume that in general, the mobility of our offender population is also low. This has been shown to be the case in several studies on residential burglary (Pope, 1977b; Maguire, 1982; Gabor, 1984).

Worrell and Sparkes (1980) indicated that 'Multi-land use Sites' are often targets of damage and thefts themselves, but the proximity of businesses, schools, and churches may contribute to the higher or lower vandalism rates in the residential area. Their findings revealed that neighbourhoods located in proximity to multi-land use sites, which are designed to attract people at regular times, are more likely to experience high rates of property damage than are neighbourhoods farther away from such attractions.

'Crime of Opportunity' was the third concept discussed in this chapter. This concept deals with the factors relating to the 'Availability' of goods to be stolen and the 'Affluence' of neighbourhoods. Income has been noted as a factor in the formation of criminal populations. It can also be a factor in the criminals' selection of targets. A high income level may contribute to the attractiveness of the area as a target. Upper income victims offer attractions to lower income offenders, making residential burglary a crime of opportunity (Reppetto, 1974; Waller and Okihiro, 1978).

METHODOLOGY

Introduction: Objective

Epidemiological research in the area of social medicine has been described as the examination of broad statistical distributions of a given phenomenon. Epidemiological research can display trends in the differential frequency of occurrences. It can reveal broad operative causal factors and is used to pinpoint sensitive areas suitable for more extensive and definitive investigations. Baldwin et al. (1976) suggest that the understanding of a phenomenon usually depends first on the accurate description of it, including where and when the phenomenon most often occurs.

Ecological research can fulfil a similar role in criminology. Ecological research has been regarded as a means to an end, in that it can provide explanations and meanings of the phenomenon studied. Ecological studies, like epidemiological investigations, are critical for giving direction to the field of criminology. Relationships which consistently appear, even if they are weak, must be taken into account in any theory of crime or criminality (Baldwin et al., 1976).

With this in mind, an ecological approach will be used in this research. Three aspects of ecological research will be employed through the course of this study. An areal study of residential break and enter will be conducted to focus on the patterns of distribution of

this crime throughout the cities of Ottawa and Vanier. The occurrences will be spatially determined through the use of dot maps (Herbert, 1982).

The areal information will then be aggregated or grouped into various sized units for analysis. Crime-specific information of residential break and enter will be displayed and discussed based on these aggregate units. The study will focus on the crime rates and the frequency of distribution of various indices at an aggregate scale (Herbert, 1982).

The main objective of this thesis is to provide specific knowledge of residential break and enters in Ottawa and Vanier from which various policies and strategies could be developed by the Ottawa Police Force to combat this crime. As is the case in epidemiological research, more knowledge of and understanding of the distribution and frequency of residential break and enter is essential to the development of policies and strategies. This thesis is intended as a test-pilot project in order to bring to the attention of management level officers within the Ottawa Police Force the availability and potential of such information. The first two aspects of ecological studies will, in part, fulfill this objective and will provide detailed information on which the recommendations and conclusions of this thesis, and subsequent Ottawa Police Force studies, will be based.

A third aspect of ecological studies involves the analyses of units/districts within cities with a disproportionate share of offences or offenders. The areal analysis might identify clusters of offences or offenders within the city and an ecological analysis of these clusters, involving such objective measures as demographic, socio-economic, and living conditions, will demonstrate their environmental correlates (Herbert, 1982). The second objective of this thesis will be then, to determine if there are concentrations of residential break and enters in the cities of Ottawa and Vanier, and if so, what are the characteristics of these areas and why are they at high risk?

Baldwin et al. (1976) stated,

> Ultimately, the detailed study of recorded crime in relation to hidden delinquency in selected areas, together with detailed studies of the local context ... should lead to gains in the understanding of selected types of criminal behaviour (p.32).

In the case of this thesis, the study of selected areas will lead to a more informed discussion of residential break and enter and further assist in the development of policies and strategies to prevent or reduce residential break and enter.

Data Source and Collection

The data will consist of approximately 1000 Ottawa Police residential break and enter occurrence reports collected from February 1, 1987 to April 30, 1987. Each report will be reviewed by the researcher and summarized, collecting the following information:

- file number
- date of occurrence
- day of week
- time of day
- location
- type of structure
- point of entry
- mode of entry

Each summary will then be coded, using the operational definitions outlined in this section, and entered into a record/file system on the Ottawa Police Force's computer system.

Two areal units will be recorded for the purpose of analyses. The 'location' of each occurrence will be plotted on a map of Ottawa and Vanier, using the street address and a city directory in order to precisely record 'location'. The city-street level data has been referred to as the microecological setting of analysis (Cartwright, 1969).

A second areal unit, which includes such areas as census tracts, cities, and countries, is called the mesoecological setting of analysis (Cartwright, 1969). The geographical area policed by the Ottawa Police Force is

divided into four districts for reporting, recording, and patrolling purposes. Ottawa Centre extends south of the Ottawa River (Parliament Hill) to the Rideau River. To the west the area is bounded by the railway track at Preston Street and to the east by the Rideau Canal. Ottawa West is bounded by the Ottawa River on the north, extending south to the city limits (Baseline Road). To the west the area is bounded by the city limits (Nepean) and to the east by the railway tracks (Preston Street), the Rideau Canal and Rideau River. Ottawa East is bounded by the Ottawa River on the north and extends south to the Queensway/Lees Ave. This area extends east from the Rideau Canal to the city limits at Gloucester. Ottawa East includes the city of Vanier, and excludes Rockliffe. Ottawa South extends south of the Rideau River to the city limits. To the west the area is bounded by Mooney's Bay and the Rideau Canal and to the east by the Queensway. These four police districts will be outlined on the map of Ottawa/Vanier thereby allowing the researcher to determine into which district each occurrence fell.

The areal patterns revealed in a mesoecological setting may represent the patterns present in a lower setting of aggregation. The patterns revealed for the distribution of residential break and enters for the Ottawa Area may truly reflect those patterns in each police district. However, an analysis of the data solely at the

city-level may distort important differences in the distribution of residential break and enter in the lower settings of aggregation. An appearance of homogeneity may be projected, when one does not actually exist. The analyses of the break and enter data found in this thesis will include the Ottawa Area and the four police districts, lower settings of aggregation, in order to avcid concealing such differences (Brantingham and Brantingham, 1981).

Administrative units, outlined primarily for governmental use, are also used in ecological studies as settings of analyses. In this thesis, the seventy-two census tracts for the Ottawa Area, as outlined in the 1981 Canadian Census, will be included on the map of Ottawa/Vanier, in order to determine the census-tract location of each occurrence. The census tract and police district for each occurrence will be recorded by the researcher and entered into the Force's computer break and enter file, along with the other previously mentioned indices. The inclusion of the census tract and police district information is necessary for the analyses portion of this thesis, which will be discussed later in the Methodology Chapter.

Operational Definitions

This next section outlines in detail the definitions of the indices collected in this thesis. As

well, the numerical coding system for the computer data entry will be indicated.

Day of the Week

This represents the day of the week on which the incident was alleged to have occurred. Incidents in which one day of the week was not or could not be determined will be recorded as "other". This usually reflects situations in which a household was vacant over a period of 24 hours, and it was not possible for the reporting officer to establish the exact day of the break-in.

The days of the week were numbered from one to seven, beginning on Monday through to Sunday. The "other" category was numbered 8.

Portion of the Week

Some studies have suggested that residential break and enter is a weekday occurrence (Scarr, 1973; Reppetto, 1974; Waller and Okihiro, 1978). Other studies have indicated that more residential burglaries are committed on Saturday and/or Sunday (Maguire, 1982; Walsh, 1980).

Two categories were created for portion of the week to reflect the traditional divisions made in most peoples lives. The first of these is the traditional working week from 0000 hours Monday to 1759 hours Friday. The weekend was determined from 1800 hours Friday through to 2359 hours Sunday.

Although it may not be possible to determine the day of the week for a percentage of the occurrences, it may be possible to determine if the occurrence took place

during the week or on the weekend. The victim may have left her home on Tuesday at 1800 hours and returned on Thursday at 1325 hours to discover her residence had been broken into. It is not possible to determine on which day this break-in occurred, but it is possible to state that this occurrence was a weekday event. The variable "portion of the week" was created, in part, in an attempt to answer this question of weekday versus weekend.

Weekday and weekend occurrences will be coded 1 and 2 respectively. Those occurrences which can not be classified as either weekday or weekend was placed in the "other" category and coded '3'.

Time of Day

Break and enters were classified according to whether they occurred in the daytime (0700 - 1759), evening (1800 - 2359), or night-time (2400 - 0659).

Time categories of equal lengths were not used because it was believed that this would be neither productive nor useful. These categories were created in an attempt to reflect the 'average' daily pattern of today's population. As well, smaller time periods were not incorporated because it is believed that the 'time of day' data "becomes less accurate as the fineness of the time interval increases" (Scarr, 1973 p.31). The classification of 'time of day' would become increasingly more difficult if the time periods were finer, since in a majority of the occurrences, the residents are not home when the break-in occurs.

In the incidents in which it will not be possible to determine when the break-in occurred, within the above parameters, or when no information is

available on when the break-in occurred, the category "other" was used. The four time categories will be numbered one to four, beginning with daytime as number one to "other" as number four.

Type of Structure

This refers to the type of structure in which the break-in is alleged to have occurred. The type of structure includes the following categories:

1) Single family dwelling: includes single detached dwellings, duplexes, semi-detached homes.

2) Low-rise Apartment: Buildings with six or less units, including old homes converted into several small apartments.

3) High-rise Apartment: Buildings with seven or more units.

4) Townhouse: A line or group of homes joined by common walls. Includes garden homes, coach homes, etc.

5) Rowhouse: Public housing. Does not include public housing in apartment buildings.

6) Other: Those incidents which do not fall into one of the above mentioned categories. Example: motor home, house boat, etc.

The coding system will employ the numbers assigned above.

Point of Entry

Refers to the point at which the residence was entered. If two points of entry were identified in the report (ie. pried door, then smashed window) the point at which entry was

actually gained was recorded. Attempted entries are also included. In those occurrences in which two attempted entries were reported the first point of entry noted was recorded.

The categories and coding system were as follows:

1) front door, 2) side door, 3) rear door, 4) patio/balcony door, 5) door unstated, 6) front window, 7) side window, 8) rear window, 9) basement window, 10) window unstated, 11) other

Door and window unstated include those occurrences in which the reporting officer did not include specific information on the point of entry. 'Other' refers to the points of entry reported that do not fall into any of the defined categories ie. air conditioning vent, milk box, etc.

Mode of Entry

This refers to how a premises was entered. Mode of entry was categorized according to eight dimensions. They are:

1) Forced or pried entry: Refers to a window or door which appears to the officer taking the report to have been opened with some form of force. Pried open would include any point of entry in which there were marks that would indicate some form of leverage was used. The exact form of force or prying is not usually stated in the report.

2) Smashed or kicked entry: Combines smashed and kicked. One might smash in a window with a rock or a fist or kick in a door. Both motions are considered relatively the same.

3) Left unlocked: Refers to cases where a resident left open a window to

enjoy a summer breeze, or left a door unlocked when he/she went to the grocery store. An assumption is made that there was some form of evidence at the scene of the break-in that lead the officer to believe that the window or the door was the actual point of entry.

4) Key or pick: Refers to those occurrences where the resident indicated that he/she believed entry was gained using a key. At times there are marks on the door lock or the lock is jammed indicating it was jimmied or picked.

5) No sign of forced or pried entry: This includes those occurrences in which neither the officer nor the resident could locate the point of entry. All the doors and windows were secure and no part of the exterior of the residence had been damaged.

6) Smashed window/unlocked door: Includes those occurrences in which the suspect(s) smash a window on the door or beside the door, reach in and unlock the door. Also includes those occurrences in which an attempt was made to enter using this method, however, the suspect(s) was unable due to the key-locked dead bolt.

7) Removed lock: Refers to those incidents in which the lock and/or door knob were forcibly removed or damaged in order to gain entry.

8) Other: Includes all modes of entry that do not fall into one of the above mentioned categories.

High Break and Enter Rate

Operationally defined as those census tracts with a break and enter rate twice the estimated annual rate for the city of Ottawa. The annual rate of 1482 occurrences per 100,000 population has been calculated based on the actual number of reported break-ins in 1986 (4500) and the enumerated population of Ottawa as of January 1986 (303,617).

In January 1986 the estimated population of the city of Vanier was 18,803. During the year 1986, 483 actual break and enters took place. This would calculate into an estimated rate of 2569 occurrences per 100,000 population. The Vanier rate is almost two times that of Ottawa's rate. Assuming that the Ottawa Police Force would display equal concern for all the areas it polices, one annual rate (1482/100,000) will be used to determine 'high' areas in both Ottawa and Vanier.

Since this initial project is three months in length, the actual number of break-ins recorded in each tract will be multiplied by four, and the population of the tracts will be used to calculate each tract's estimated annual rate.

Low Break and Enter Rate

Refers to those census tracts with a break and enter rate one-half or less the annual rate for the city of Ottawa. As noted above, the calculated annual rate is 1482 occurrences per 100,000 population. The number of low rate areas chosen will depend on the number needed for comparison in the Community Analysis portion of this thesis. The comparison of high and low rate area will be outlined in the Analysis section of the Methodology Chapter.

Analysis

A comparative analysis approach will be used in this thesis. Grounded theorists strive to discover theory from data. Comparative analysis is a method grounded theorists employ. Comparative analysis involves the systematic collection, coding and analysis of data. The researcher works outward from the data in this process and attempts to make generalized explanations to other situations as theory emerges (Baldwin et al., 1976).

The theory generated through this form of empirical enquiry is called substantive theory. Specific facts generated from the modus operandi information in this thesis will be used to derive 'general facts'. General facts often give the appearance of theory because of their theoretical basis. A grounded theorist makes generalizations, based on his/her empirical findings, through the application of these findings to theoretical concepts. Much of the work of substantive theorists, in the areas of crime and delinquency, results in empirical generalizations (Baldwin et al., 1976).

In this thesis, the patterns revealed for indices such as 'day of week' and 'point of entry', and factors found to be associated with residential break and enter will form the basis for generalizations to break and enter in the Ottawa Area. The specific facts will be supported by theoretical concepts to create general facts about break

and enter, relevant to the level of the areal unit of analysis.

Mesoecological Level of Analysis

Frequency distribution tabulations will be completed for the six modus operandi indices outlined in this chapter (day of week, portion of week, time of day, type of structure, point of entry, and mode of entry). These tabulations will be completed for five areal units: the Ottawa Area (Ottawa/Vanier) and the four police districts (Ottawa Centre, West, East, and South), for the total number of reported residential break and enters in each areal unit.

The frequency distribution tabulations will include individual cell counts and the rate of frequency for each category, within its own areal unit. As well, chi-square analyses will be completed to determine if a significant difference exists between the observed distribution or pattern and the expected number of occurrences in each category, based on a null hypothesis. The null hypothesis for each chi-square test will be outlined in full in the findings chapter of this thesis.

Cross-tabulations will be performed on selected variables in order to examine the interrelationships between and among the variables. Frequency counts will be cross-tabulated for each cell. As well, the

cross-tabulations will include the rates of frequency for each category by each variable. For example, in the cross-tabulation of 'Time of Day' versus 'Day of Week' the total count for break-ins that occur on Monday during the daytime might be 100 occurrences. This figure would represent sixty percent of the incidents reported to have taken place on a Monday and fifteen percent of all daytime occurrences. The cross-tabulations to be completed will be: A) 'Time of Day by 'Day of Week', B) 'Time of Day' by 'Portion of Week', C) 'Point of Entry' by 'Type of Structure', D) 'Point of Entry' by 'Time of Day', E) 'Mode of Entry' by 'Point of Entry', and F) 'Mode of Entry' by 'Type of Structure'. These combinations were selected because they are believed to be most common.

Chi-squared two-variable tests will be completed for those cross-tabulations in which the expected frequency is equal or greater than 5 in at least eighty percent of the cells (Runyon and Haber, 1977, p.334).

Since the main objective of this thesis is to provide specific knowledge of residential break and enters for the Ottawa Police Force, the information content of these analyses will be of a descriptive nature. A descriptive analysis involves summarizing statements of the common elements, with factor interpretations that are essentially straight forward and descriptive (Cartwright, 1969).

There are numerous methods of multi variate analysis (multiple regression, factor analysis, duster analysis, etc.) that are available to this researcher, that have been used in various ecological studies. However, it has been suggested that the further one moves from the basic data through the use of more technically complex forms of analyses, the more difficult it becomes to interpret the data and the easier it is for the original objectives to become blurred or lost (Ross, 1977; Baldwin, 1979).

An advantage of multivariate analysis, over simpler approaches such as descriptive analysis, is the ability to absorb large quantities of complex information without the need for prior formulation of theory. Interpretation of the results can however, involve what Baldwin (1979) describes as "tortuous intellectual gymnastics" (p.46). Descriptive bivariate statistics will organize and present the data in a convenient, usable, and communicable form. The original objective of specific knowledge of residential break and enter will not be lost in complex forms of analyses.

Scarr (1973) used anecdotal material to support his own ideas in his work on motives for stealing and crime opportunity. He suggested that his work in these areas was hypothesis-generating and idea-developing and conceded that it may not stand up to rigorous analysis. However, that

does not mean that the information presented was invalid or less than adequate in its attempt to provide clues to criminal justice personnel interested in deterrence. It is the belief of this researcher then, that the same can be said for the information presented in this thesis.

Community Analysis

The Community Analysis section will focus on the second objective of this thesis, that being identifying areas which are experiencing a 'high' concentration of residential break and enters. Assuming that such areas will be identified, this analysis will be comprised of two parts. The first part will involve an analysis of the frequency distribution of residential break and enter in the identified areas. In the second analysis, inferences will be drawn between the underlying characteristics and the patterns revealed in the areal distribution of residential break and enter, in those areas experiencing a 'high' concentration of residential break and enter (Cartwright, 1969).

The first part of the Community Analysis will include frequency distribution tabulations for the six modus operandi variables outlined earlier in this chapter. The tabulations will be completed for those census tracts identified as having a 'high' break and enter rate (as defined in the Operational definitions). As well,

frequency distribution tables will also be displayed for the police District(s) in which these census tracts are located, for the purpose of comparisons.

The frequency distribution tabulations will include individual cell counts and the rate of frequency for each category, as was the case in the Mesoecological Analysis. Chi-square tests of independence will also be completed in this analysis section. As well, cross-tabulations will be performed on selected variables. The cross-tabulations to be completed will be the same as those outlined in the Mesoecological Analysis section. The informational content of these analyses will be of a descriptive nature.

The second portion of the Community Analysis will involve a comparison of the demographic features of the identified problem areas to areas identified as having 'low' residential break and enter rates (as outlined in the Operational definitions). This section will add to the knowledge gained through the 'where, when and how' information and will consider some of the demographic factors which have been shown to be associated with residential break and enter, as discussed in the literature review chapter of this thesis.

A review of the literature reveals three main interlinked concepts of causation of residential break and

enters. Waller and Okihiro (1978) refer to the first concept of causation as 'Crime as Opportunity'. This concept focuses on the socio-physical characteristics of the residence and the role they play in residential break and enter rates. This concept will be considered in this thesis through the examination of two indices: 'degree of occupancy' and 'surveillance level of residence'.

Using Canadian Census data, three measures were constructed to examine 'degree of occupancy': I) Percent Census Families in Private Households with $\geq$ 2 in Labour Force, II) Percent Husband-Wife Families with both in Labour Force, and III) Percent Lone-Parent Families with some members in Labour Force.

The visibility of points of entry has been proported as a factor associated with residential break and enter rates. The frequency distribution analyses for point of entry for the 'high' break and enter areas will be compared with the 'low' area distributions as a measure of 'surveillance level of residence', with the assumption being that the 'high' areas will display different patterns of distribution than the 'low' areas.

The second concept of causation was labelled as 'Crime and Opportunity' by Waller and Okihiro (1978) and deals with the presence of potential offenders. The assumption of this concept is that areas with, or close to, large criminal populations will sustain correspondingly

high crime rates. To examine this assumption three measures were formed using Canadian Census data: I) Incidence of Low Income Economic Families, II) Average Private Household Income, and III) Population Density by Square Kilometre. The rates of the identified 'high' areas will be compared with the 'low' areas to determine if the areas in question possess some of the socio-economic characteristics believed to produce or attract criminals.

Studies have indicated that break and enter is a crime of youth, with youths committing a majority of all occurrences (Pope, 1977b; Maguire, 1982). The 'age composition of area' will be examined to determine if a difference exists between 'high' and 'low' rated areas. The Canadian Census data reveals what percentage of the population in a given area is fifteen years of age or under. These figures will be employed as a measure of 'age composition'.

The attractiveness of an area as a target has been suggested as a factor associated with residential break and enter. Waller and Okihiro (1978), in their discussion of '<u>Crime of Opportunity</u>', indicate that the <u>affluence</u> of neighbourhoods and the relative availability of goods to be stolen is a determining factor in burglars selection from available targets. To measure this concept of 'Affluence', three measures were constructed using Census data: I) Average Private Household Income, II) Average Value of

Household, and III) Percentage of Population in which the Gross Payments > 25% of Household Income. The percentage differences of the measures between the 'high' and 'low' areas will be used to determine if 'affluence' is a factor related to break and enter rates.

These three concepts of crime causation can be seen in Lawrence Cohen and Marcus Felson's "routine activities approach" as a theory for crime trends. A motivated offender, a suitable target, and a poorly guarded target must be present simultaneously in order for a crime to occur. Cohen and Felson's studies concentrated on the relationship of crime trends with target suitability (Crime of Opportunity) and well-guarded targets (Crime as Opportunity). They took offender motivation (Crime and Opportunity) as given. (Koenig, 1987).

The second portion of the Community Analysis section will seek to explain the break and enter patterns identified in this thesis using the three concepts of crime causation outlined above. Such explanations require dynamic or non-static theories. Cohen and Felson's "routine activities approach" is one such theory, which combines the offender, the attractive target and its vulnerability in an explanation of crime trends.

The actual percentages and figures obtained from the 1981 Canadian Census for the indices (ie: Percent

Lone-Parent Families with some members in Labour Force, Average Private Household Income, Average Value of Household, etc.) will not be listed in Community Analysis section. Instead the percentage differences between 'high' and 'low' areas will be used in the analyses. For example, the actual figure of 'Average Value of Household' for a 'low' area will not be compared to the 'high' area figure. Instead, the analysis will indicate that homes in the 'high' area are, on average, valued at 40% more than those in the 'low' area.

It is believed that the utilization of percentage differences for the sake of comparison will allow for simpler interpretation and understanding of the concepts, than would the use of percentages, rates, and dollar values. In addition, the confidentiality of the break and enter information discussed in this thesis is also a concern. Listing demographic features, for those census tracts identified as having a 'high' break and enter rate, would give an individual the means to identifying the specific location of these tracts. Therefore, the actual figures will not be displayed.

Like the Mesoecological Analysis, in the Community Analysis the informational content will be of a descriptive nature. The interpretations of the factors associated with residential break and enter will be essentially straightforward and descriptive. The lack of use of multi

variate analysis in this thesis can be viewed as a shortcoming. However, as was noted earlier, this limitation is being accepted and descriptive analyses are being utilized in order to present the data in a more usable and communicable form.

External or construct validity is a concern in this research, as it is in most. A researcher is making an assumption about the underlying causal networks, which are crucial to an understanding of the indices he/she uses, and also to the interpretation of the findings. The factors measured in this thesis were theoretically based, using the information found in the literature review. A researcher is faced with the concern that he/she is obtaining measurements on the conceptual variable that he/she believes is being measured. This is an underlying assumption that will be present in this researcher's construction of indices (Cartwright, 1969).

Related to this question of representativeness is the generalisation of findings. Representativeness is important because it allows the researcher to generalise or extrapolate beyond the specific findings to a broader "population". Findings that can be generalised to other settings have construct validity (Golden, 1976; Campbell, 1971).

Clifford Shaw and Henry McKay focused their study of the areal distributions of crime on replication over

settings rather than statistical hypothesis-testing within one setting. It has been suggested that the fact that they sought replication over settings was in itself an indication of their interest in scientific generalization, as well as the understanding and correction of delinquent areas (Cartwright, 1969).

Although it is not the intention of this researcher to suggest that the findings of this thesis could be compared to Shaw and McKay's work on concentric zonal models, their attention on replication over settings, and not statistical hypothesis-testing within one setting, is the extent of this comparison. This thesis acts as a test-pilot project in order to bring to the attention of the Ottawa Police Force the availability and potential of such information. It is hoped that through the continued replication of the Mesoecological and Community Analyses over settings that the representativeness and generalisability of the Force's findings will increase.

FINDINGS

Mesoanalysis: Introduction

Between February 1, 1987 and April 30, 1987, 950 residential break and enters were reported to have taken place in the Ottawa Area. Each of these occurrences was summarized and coded by the researcher, collecting the following information:

- file number
- date of occurrence
- day of week
- time of day
- location
- type of structure
- point of entry
- mode of entry

The coded summaries for the 950 residential break and enters were then analyzed using a statistical software package created by the Ottawa Police Force Computer Services Section. Frequency distribution tabulations were completed, for the four police districts and the Ottawa Area, for the following categories of information: day of week, portion of week, time of day, type of structure, point of entry, and mode of entry. Chi-square tests of independence were performed in order to determine whether or not a significant difference existed between the observed number of occurrences and the expected number of occurrences within these categories.

The findings for each analysis, in the four police districts and the Ottawa Area, will be displayed in tabular form in this chapter. A descriptive analysis of each variable and the relative statistical significance of the distributions displayed will follow. Cross-tabulations will also be presented for those combinations of elements that are most common, as indicated in the Methodology Chapter.

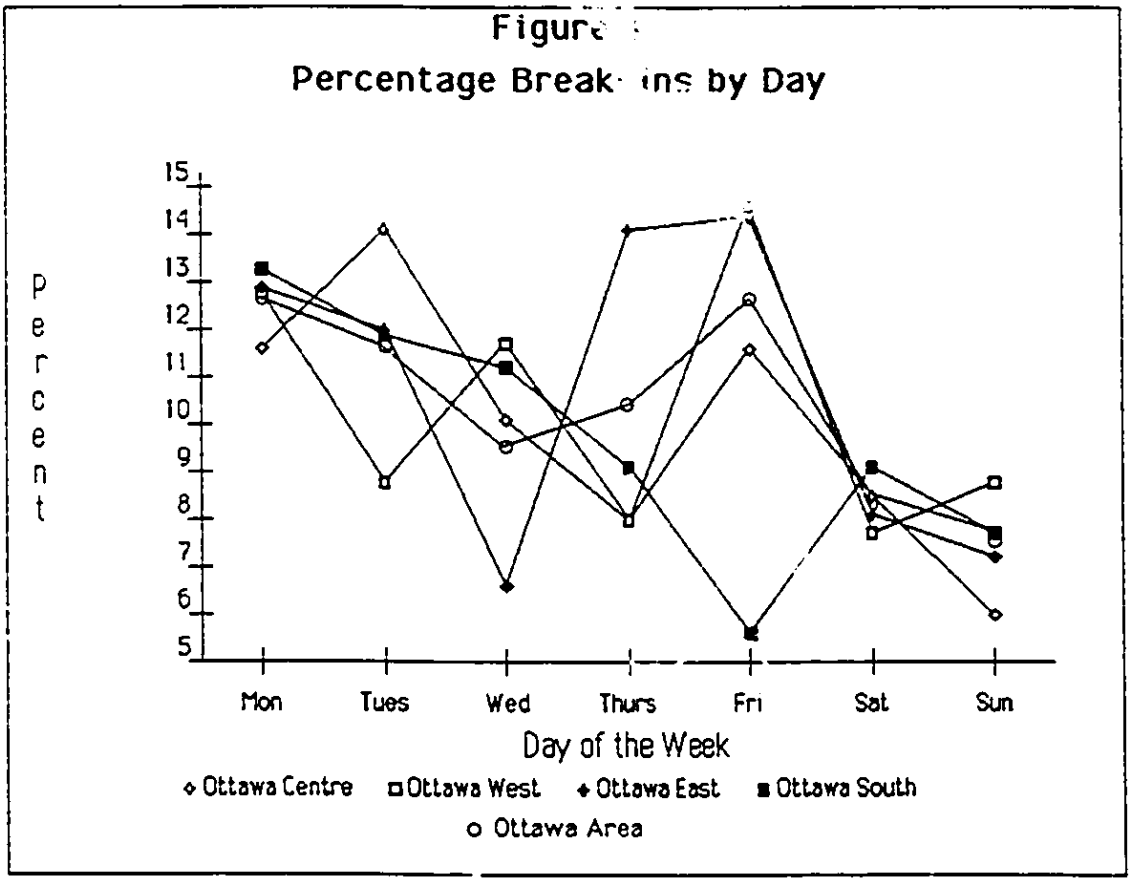
The display and discussion of each variable will be preceded by a brief description of the variable being reviewed.

Day of the Week

This represents the day of the week on which the incident was alleged to have occurred. Incidents in which one day of the week was not or could not be reported were recorded as 'other'. This represented approximately twenty-eight percent of the occurrences reported in the Ottawa Area during the test period.

During the test period break and enters took place most frequently on Monday's (12.6%) and Friday's (12.5%) in the Ottawa Area. In Figure 1 below, a decline can be seen from Monday to Wednesday, with an incline on Thursday and again on Friday. Saturday (8.6%) and Sunday (7.5%) were the least frequently selected days of the week in reported break and enters in the Ottawa Area.

Ottawa East follows this same pattern. Almost 13 percent of the reported break-ins in Ottawa East are known to have occurred on Monday. Twelve percent of the reported occurrences took place on Tuesday. The percentage of occurrences then drastically drops to 6.6% on Wednesday. Following the pattern of the Ottawa Area occurrences, 22 of the 334 break and enters reportedly took place on Wednesday, 14.1% on Thursday, and 14.4% reported break-ins on Friday. A decline is then experienced on Saturday and Sunday to 8.1% and 7.2% of the occurrences respectively.



A decline is also noticeable from Monday (13.3%) to Wednesday (11.2%) in Ottawa South. However, instead of increasing on Thursday and Friday, as is the case in the Ottawa Area and Ottawa East, reported break and enter occurrences continue to decline on Thursday (9.1%) and Friday (5.6%). Break and enters increase in Ottawa South on Saturday (9.1%) and Sunday (7.7%). These figures are similar to those of the Ottawa Area for Saturday and Sunday.

In Ottawa Centre, instead of a decline on Tuesday there is an increase in the curve. Fourteen percent of the break and enters were reported to have taken place on Tuesday in Ottawa Centre, making Tuesday the most frequently reported day of the week. Break-ins then decline on Wednesday to 10.1% of the occurrences, and decline again on Thursday to 8.0% of the reported incidents. Break-ins then increase to almost twelve percent on Friday in Ottawa Centre. As in the Ottawa Area and Ottawa East, break and enter occurrences are lowest on Saturday (8.5%) and Sunday (6.0%).

Break and enters took place most frequently on Monday's and Friday's in Ottawa West (12.8% and 14.6% of the reported occurrences, respectively). As in the Ottawa Area there is a decline in the number of occurrences reported on Tuesday (8.8%), however, break-ins increase on Wednesday to 11.7% of the total number of occurrences. The

pattern in Ottawa West matches that of the Ottawa Area and Ottawa East with an increase on Friday and a decline on the weekend. Almost 8 percent of the break and enters were reported to have taken place on Saturday and 8.8% on Sunday.

Table 1

Chi-Square Analysis of Day of the Week

District	X^2	N
Ottawa Area	22.88	685
Ottawa Centre	9.26	133
Ottawa West	11.50	198
Ottawa East	20.94	251
Ottawa South	6.12	97

degrees of freedom = 6
critical value = 12.592 at the .05 level of significance

Chi-square tests of independence were performed to determine whether or not a significant difference exists between the observed number of occurrences, for which the day of the week is known, and the expected number of occurrences in these categories. The null hypothesis in this test suggests that the occurrences would be equally distributed across the days of the week.

Employing a .05 probability level, the null hypothesis may be rejected if the obtained X^2 value exceeds the critical value of 12.592. The null hypothesis was rejected for the Ottawa Area and Ottawa East, with X^2 values of 22.88 and 20.94 respectively. This finding

Table 2

Frequency Analysis of Day of the Week

	Ottawa Area	Centre	West	East	South
Monday	12.6%(120)	11.6%(23)	12.8%(35)	12.9%(43)	13.3%(19)
Tuesday	11.5 (109)	14.1 (28)	8.8 (24)	12.0 (40)	11.9 (17)
Wednesday	9.5 (90)	10.1 (20)	11.7 (32)	6.6 (22)	11.2 (16)
Thursday	10.3 (98)	8.0 (16)	8.0 (22)	14.1 (47)	9.1 (13)
Friday	12.5 (119)	11.6 (23)	14.6 (40)	14.4 (48)	5.6 (8)
Saturday	8.2 (78)	8.5 (17)	7.7 (21)	8.1 (27)	9.1 (13)
Sunday	7.5 (71)	6.0 (12)	8.8 (24)	7.2 (24)	7.7 (11)
Other	27.9 (265)	30.2 (60)	27.7 (76)	24.9 (83)	32.2 (46)
Total	100 %(950)	100% (199)	100% (274)	100% (334)	100% (143)

suggests that the occurrences are not equally distributed across the days of the week. The limited number of cases in Ottawa Centre, Ottawa West, and Ottawa South may contribute to the fact that the null hypothesis is accepted in these areas.

A cursory review of Table 2 might indicate that in general, in the Ottawa Area and the four police districts, break and enter is a weekday phenomenon. A greater percentage of the break-ins occur on each day during the week than on the weekend. On average, 107.2 break-ins were reported to have occurred on a weekday in the Ottawa Area during the test period compared to 74.5 occurrences on each weekend day. This would work out to an average of 11.3% of all the break-ins per weekday and 7.9% per weekend day. This distribution would appear to be consistent in all four police districts as well.

However, this may not necessarily be the case. One of the problems with identifying the day of the week on which the break-in was alleged to have occurred is the fact that too often the victims and/or the police are unable to determine the particular day on which the offence took place. Often the occurrences have taken place over two or more days and identifying one particular day is impossible. The "other" category was used for such occurrences. As noted in Table 2, in a substantial number

Table 3

Frequency Analysis on Portion of the Week

	Ottawa Area	Centre	West	East	South
Weekday	59.6%(566)	55.8%(111)	59.5%(163)	62.0%(207)	59.4%(85)
Weekend	25.6 (243)	25.6 (51)	23.7 (65)	27.2 (91)	25.2 (36)
Other	14.8 (141)	18.6 (37)	16.8 (46)	10.3 (36)	15.4 (22)
Total	100 %(950)	100% (199)	100% (274)	100% (334)	100% (143)

Weekday is from 00:00 Monday to 17:59 Friday

Weekend is from 18:00 Friday to 23:59 Sunday

(265/950, 27.9%) of occurrences in the Ottawa Area, the day of the week could not be identified. This is also the case in Ottawa Centre (60 occurrences or 30.2%), Ottawa West (76 occurrences or 27.7%), Ottawa East (83 occurrences or 24.9%) and Ottawa South (46 occurrences or 32.2%).

The variable "Portion of the Week" was created, in part, to attempt to answer this question of weekday versus weekend. Although it may not be possible to place a large number of occurrences within one particular day, it may be possible to determine if the occurrence took place during the week or on the weekend. The victim may have left her home on Tuesday at 1300 hours and returned on Thursday at 1600 hours to discover her residence broken into. It is not possible to determine on which day this break-in occurred, but it is possible to state that this occurrence was a weekday event.

As we expected, a smaller percentage of the occurrences could not be placed into either the weekday or weekend parameters than the percentage of occurrences which could not be placed into one particular day of the week. In the Ottawa Area, only 14.8% of the occurrences were placed in the 'other' category in the portion of the week data compared to 27.9% in the day of the week data. This ability to subdivide the data should aid in determining whether break and enter is a weekday or weekend phenomenon.

The data in Table 3 indicates that in actual numbers a greater percentage of break-ins occur during the week in the Ottawa Area and all four police districts. Does this however, indicate that break and enter is a weekday phenomenon? As defined by the researcher, there are four and three-quarter days during the week (00:00 Monday to 17:59 Friday) and two and one-quarter days during the weekend. If break and enters were proportionately distributed across the entire week based on this logic, 67.86% of the break-ins would be classified as weekday occurrences and 32.14% would be classified as weekend occurrences. Chi-square tests of independence were performed on the portion of the week data using this argument as the basis for the null hypothesis. The results are found in Table 4.

Table 4

Chi-Square Analysis of Portion of the Week

District	X^2	N
Ottawa Area	2.44	809
Ottawa Centre	0.01	162
Ottawa West	1.12	228
Ottawa East	0.28	298
Ottawa South	0.22	121

degrees of freedom = 1
critical value = 3.841 at the .05 level of significance

Employing = .05 we find that the critical region consists of all the values of X^2 3.841. Since

none of the obtained X^2 are greater than 3.841 the null hypothesis is accepted. Break and enter occurrences are proportionately distributed across the entire week. Therefore, although there are particular weekdays on which break-ins occur more frequently in the Ottawa Area and the four police districts, break and enter was neither a weekday nor a weekend phenomenon during the test period.

Time of Day

Break and enters were classified according to whether they occurred in the daytime (0700-1759), evening (1800-2359) or night-time (2400-0659). In the incidents in which it was not possible to determine when the break-in occurred, within the above parameters, or when no information was available on when the break-in occurred, the category "other" was used. This represented forty-one percent of the reported residential break and enters in the Ottawa Area during the test period.

Inspection of the data in Table 5 reveals that break and enter is a daytime phenomenon. Break and enters occur most frequently during the daytime in all four police districts, ranging from as high as almost forty percent in Ottawa East to a low of one-quarter of all occurrences in Ottawa South. Less than twenty percent of the break-ins in the Ottawa Area occurred during the evening hours. On average in the different districts, there were greater than

Table 5

Frequency Analysis on Time of Day

	Ottawa Area	Centre	West	East	South
Daytime (0700-1759)	33.8%(321)	27.6%(55)	36.1%(99)	39.2%(131)	25.2%(36)
Evening (1800-2359)	18.1 (172)	21.1 (42)	13.5 (37)	18.9 (63)	21.0 (30)
Night (2400-0659	7.3 (69)	6.0 (12)	7.7 (21)	8.1 (27)	6.3 (9)
Other	40.8 (388)	45.2 (90)	42.7 (17)	33.8 (113)	47.6 (68)
Total*	100 %(950)	99.9%(199)	100% (274)	100% (334)	100.1%(143)

*May not equal 100.0% due to rounding

fifteen percent fewer break-ins reported to have occurred during the evening than during the daytime.

Ottawa Centre and Ottawa South experienced the smallest difference between percentage of occurrences that were daytime versus evening, with a difference of 6.5% and 3.5% respectively. Break and enters were not clearly a daytime occurrence in these areas. Evening occurrences were more prominent in these two police districts than compared to Ottawa West and Ottawa East. Night-time occurrences were lower in Ottawa Centre (6.0%) and Ottawa South (6.3%) than in the Ottawa Area in general (7.3%).

There was a large difference in percentages of daytime versus evening occurrences in Ottawa West. Evening break-ins were lower in Ottawa West (13.5%) than in the rest of Ottawa. There were 22.6% more daytime break-ins than evening occurrences in Ottawa West.

The data in Table 5 indicate a large difference between the percentages of daytime versus evening occurrences in Ottawa East as well. Despite the fact that almost nineteen percent of the occurrences in Ottawa East occurred during the evening (which is slightly above the Ottawa Area evening average), break and enter could be considered a daytime event, since 39.2% of the reported occurrences took place during that time period. A greater percentage of occurrences took place during the night-time in Ottawa East than any of the other three police

districts. However, with only 8.1% of the occurrences in Ottawa East reportedly taking place during the night-time, there is little cause for concern.

The high percentages of occurrences that can not be placed into one of the three categories must be noted when discussing time of day. Over forty percent of the occurrences in the Ottawa Area could not be placed into a 'standard' time category. Establishing the time that the break-ins are occurring is an important aspect of the overall analysis and may play a primary role when drawing final conclusions and policies. The individuals using this information must take this fact into account when examining the time of day data.

Chi-square tests of independence were performed, on those occurrences for which a 'standard' time of day could be identified, to determine if a significant difference exists between the observed and the expected number of occurrences. The three time categories (day, evening, and night) are of different lengths, therefore, it is expected that the occurrences will be distributed in proportion to the category's length in hours. Since the 'daytime' category is eleven hours in length, 11/24 or 45.83% of the occurrences are expected to take place during the daytime. The 'evening' category is six hours in length. Therefore, 6/24 or 25.0% of the occurrences should occur during the evening. In the 'night' category, 7/24 or

29.17% of the break and enters should occur during this time period. Using these figures the expected frequencies for each category can be determined. The null hypothesis for this test suggests that the occurrences will be distributed in direct proportion to the duration of each of the three categories. The results are listed in Table 6.

Table 6

Chi-Square Analysis of Time of Day

District	X^2	N
Ottawa Area	77.67	562
Ottawa Centre	20.82	109
Ottawa West	23.73	157
Ottawa East	31.59	221
Ottawa South	14.41	75

degrees of freedom = 2
critical value = 5.991 at the .05 level of significance

Since the X^2 value for the Ottawa Area and the four police districts is greater than 5.991, required for significance at the .05 level, we may reject the null hypothesis. The break and enter occurrences are not distributed in direct proportion to the duration of each category. In other words, we may accept the notion as suggested earlier that in general, break and enter was a daytime phenomenon during the test period.

Cross tabulations were performed for the variables time of day/day of the week for the Ottawa Area and the four police districts (see Appendix A). The results of

these cross tabulations revealed that in the Ottawa Area break and enter was a weekday/daytime and weekend/evening event. This was also found to be the case in Ottawa West, Ottawa East, and Ottawa Centre.

Ottawa South was the only police district that did not establish a predictable pattern. On Monday and Friday break-ins usually took place during the daytime. Break-ins occurring on Tuesday took place during the daytime and evening. On Wednesday and Thursday the evening was a slightly more popular time period than the daytime. On Saturday and Sunday break-ins took place during the evening and the night. There is some question as to the level of significance of these findings due to the limited number of observations in this police district (N=143) and the fact that 23/32 or 71.9% of the cells in this cross tabulation had less than five observations.

Cross tabulations were also completed for the variables time of day by portion of the week (see Appendix B). The findings were similar to those of the previous cross tabulations. Break and enter appeared to be a weekday/daytime, weekend/evening phenomenon in the Ottawa Area and Ottawa Centre, West, and East. Break-ins were a weekday daytime/evening, weekend evening/night phenomenon in Ottawa South, more so than any of the other three police districts.

Chi-square tests of independence were computed for both cross tabulations, time of day by day of the week and time of day by portion of the week. Only those observations which could be placed into a category in both time of day and day of the week or time of day and portion of the week were included in the calculations of the chi-squares. Those observations which fell into any one of the 'other' categories in the three variables in question were not included.

The null hypothesis for the time of day by day of week cross-tabulation suggests that break and enters are evenly distributed over each day of the week by the time of day. The expected frequency for each cell was determined by distributing the number of occurrences obtained in each given day in proportion to the time category's length in hours.

The null hypothesis for the time of day by portion of the week cross tabulation also suggests that break and enters are evenly distributed over the portion of the week by the time of day. The expected frequencies for the Ottawa Area and four police district tabulations were obtained by first dividing the total number of observations in each tabulation by the appropriate distribution for 'weekday' and 'weekend'. These figures were then further divided into the three time categories, in proportion to the category's length in hours. The results are found in

Table 7.

Table 7

Chi-Square Analysis of Time of DayCross-Tabulations

	TOD by DOW*	TOD by POW**	
District	X^2	X^2	N
Ottawa Area	190.97	211.89	562
Ottawa Centre	62.51	50.93	109
Ottawa West	77.40	63.08	157
Ottawa East	90.66	93.93	221
Ottawa South	39.49	27.76	75

Time of Day by Day of Week*
degrees of freedom = 12
critical value = 21.026 at the .05 level of significance

Time of Day by Portion of Week*
degrees of freedom = 2
critical value = 5.991 at the .05 level of significance

Inspection of Table 7 reveals that the null hypotheses were rejected in both cross-tabulations, for the Ottawa Area and the four police districts. Break and enters are not evenly distributed over the day of the week by time of day, nor over the portion of the week by time of day. From this we can conclude, that during the test period break and enters were in general a weekday/daytime, weekend/evening event.

Type of Structure

This refers to the type of structure in which the break-in was alleged to have occurred. Type of structure

includes six categories: i) single family dwelling (single detached dwellings, duplexes, semi-detached homes), ii) low-rise apartment (six or less units), iii) high-rise apartment (seven or more units), iv) townhouse (line/group of homes joined by common walls), v) rowhouse (public housing townhouses), and vi) other.

A review of Table 8 reveals that single family dwellings appear to be the most often selected target for break and enters. In the Ottawa Area, single family dwellings are selected most often (36.6%), followed by high-rise apartments (33.6%), and then low-rise apartments (19.1%). Single family dwellings are also the most frequently selected targets in Ottawa East (37.2%), followed by high-rise apartments (34.7%) and low-rise apartments (23.7%). Single family dwellings were reported most frequently in Ottawa Centre as well (35.7%). However, this is followed closely by low-rise apartments (34.2%). High-rise apartments (29.1%) are the third most common target in Ottawa Centre. In Ottawa South single family dwellings are also the most frequently selected target. Ottawa South is unique in that townhouses (32.2%) are the second most frequently selected targets. In the Ottawa Area, seventy-six townhouses were reportedly broken into during the test period. Forty-six or sixty percent of these occurrences took place in Ottawa South. High-rise apartments (23.1%) are the third most frequently selected

Table 8

Frequency Analysis of Type of Structure

	Ottawa Area	Centre	West	East	South
Single Family Dwelling	36.6%(348)	35.7%(71)	37.2%(102)	37.1%(124)	35.7%(51)
Low-Rise Apartment	19.1 (181)	34.2 (68)	12.0 (33)	23.7 (79)	0.7 (1)
High-Rise Apartment	33.6 (319)	29.1 (58)	40.9 (112)	34.7 (116)	23.1 (33)
Townhouse	8.0 (76)	1.0 (2)	6.2 (17)	3.3 (11)	32.2 (46)
Rowhouse	2.5 (24)	0.0 (0)	3.6 (10)	0.9 (3)	7.7 (11)
Other	0.2 (2)	0.0 (0)	0.0 (0)	0.3 (1)	0.7 (1)
Total*	100.0%(950)	100.0%(199)	99.9%(274)	100.0%(334)	100.1%(143)

*May not equal 100.0% due to rounding

target. Only one low-rise apartment was reportedly broken into during the test period.

Ottawa West is the only police district in which high-rise apartments (40.9%) are the target selected most often, followed by single family dwellings (37.2%) and low-rise apartments (12.0%). Single family dwellings are selected slightly more often than the Ottawa Area average; however, break-ins to low-rise apartments are below the Ottawa Area's average.

One question that should be considered when reviewing the data concerning type of structure is whether or not the results reflect the proportional residential composition of the Ottawa Area and the four police districts. This information has been obtained from the 1981 Canadian census and is displayed in Table 9. The Census provides information on single family dwellings and high and low rise apartment units. All remaining housing types have been collapsed into an 'other' category. (See Appendix L for Statistics Canada's census definitions for structural types).

Table 9

Residential Composition of Ottawa

	Ottawa Area	Centre	West	East	South
Single Family Dwelling	30.1%	22.0%	36.6%	18.3%	41.2%
Low-Rise Apartment	15.8	24.9	9.4	23.8	1.5
High-Rise Apartment	32.7	35.0	33.5	31.1	35.2
Other	21.3	18.0	20.3	26.7	22.0

A cursory review of Table 9 might indicate that the type of structures reported during the test period are found to be in proportion with the residential composition of the Ottawa Area and the four police districts. There would appear to be more single family and high-rise apartment dwellings in the Ottawa Area in general. This might suggest why a majority of the reported break and enters take place in single family or high-rise apartments.

In order to examine this notion, chi-square tests of independence were performed to determine if the reported break and enters were distributed in proportion to the residential composition of the Ottawa Area and the four police districts, based on the 1981 Canadian Census

figures. Inspection of Table 10 reveals that the null hypothesis would be rejected for all areas. The obtained chi-square values are greater than 7.815, required for significance at the .05 level, therefore the null hypotheses are rejected. During the test period the distribution of break and enters was not in proportion to the residential composition of the areas.

Table 10

Chi-Square Analysis of Type of Structure

District	X^2	N
Ottawa Area	69.82	950
Ottawa Centre	50.34	199
Ottawa West	21.24	274
Ottawa East	127.81	334
Ottawa South	30.03	143

degrees of freedom = 3
critical value = 7.815 at the .05 level of significance

Point of Entry

This variable refers to the point at which the residence was entered. Point of Entry is defined using nine categories: front door, side door, rear door, patio/balcony door, front window, side window, rear window, basement window, and other.

Front doors have been the point of entry in almost thirty percent of the reported break-ins in the Ottawa Area during the test period. Front doors are the most

frequently selected point of entry in all four police districts. Rear doors are the second most common point of entry in the Ottawa Area. This latter point of entry ranges from a high of approximately nineteen percent in Ottawa Centre, to a low of eight percent in Ottawa West. In Ottawa South there are slightly fewer rear door entries than on average; however, there are also slightly more patio/balcony point of entries. Patio/balcony entries account for 9.8% of the reported points of entry in Ottawa South, compared to 7.1% in the Ottawa Area.

As illustrated in Table 11, 'doors' make up over sixty percent of the reported points of entry in the Ottawa Area. In approximately twenty-six percent of the break and enters a 'window' was reported to have been the point of entry. Rear windows are the most popular type of 'window' points of entry (5.9%) in the Ottawa Area, followed closely by basement windows (5.8%). Basement windows range from a low of 3.0% in Ottawa Centre to a high of 12.6% in Ottawa South. Basement windows are the second most frequently selected point of entry in Ottawa South, second only to front doors.

It should be noted that thirty-one percent of the points of entry are attributed to unstated door or window, or a point of entry not provided in the list of possible options, or in those incidents in which a point of entry was not recorded by the reporting officer. Due to this

Table 11

Frequency Analysis of Point of Entry

	Ottawa Area	Centre	West	East	South
Front Door	29.3%(278)	20.1%(40)	29.2%(80)	35.6%(119)	27.3%(39)
Side Door	2.7 (26)	4.0 (8)	1.5 (4)	3.3 (11)	2.1 (3)
Rear Door	12.6 (120)	18.6 (37)	8.0 (22)	13.8 (46)	10.5 (15)
Patio/ Balcony	7.1 (67)	7.0 (14)	5.8 (16)	6.9 (23)	9.8 (14)
Door Unstated	9.1 (86)	19.1 (38)	12.8 (35)	3.0 (10)	2.1 (3)
Front Window	0.7 (7)	0.0 (0)	1.1 (3)	0.3 (1)	2.1 (3)
Side Window	3.6 (34)	3.0 (6)	0.4 (1)	5.7 (19)	5.6 (8)
Rear Window	5.9 (56)	3.0 (6)	4.7 (13)	7.8 (26)	7.7 (11)
Balcony Window	1.4 (13)	1.5 (3)	2.6 (7)	0.9 (3)	0.0 (0)
Basement Window	5.8 (55)	3.0 (6)	5.5 (15)	4.8 (16)	12.6 (18)
Window Unstated	8.7 (83)	9.5 (19)	12.8 (35)	6.6 (22)	4.9 (7)
Other	13.2 (125)	11.1 (22)	15.7 (43)	11.4 (38)	15.4 (22)
Total*	100.1%(950)	99.9%(199)	99.9%(274)	100.1%(334)	100.1%(143)
Door (Total)	60.8 (577)	68.8 (137)	57.3 (157)	62.6 (209)	51.8 (74)
Window (Total)	26.1 (248)	20 (40)	27.1 (74)	26.1 (87)	32.9 (47)

*May not equal 100.0% due to rounding

fact the analysis of specific points of entry may be limited. The more detailed the information is that has been provided, the more detailed the analyses of the point of entry data.

Chi-square tests of independence were completed for the point of entry data. The first test was performed on those occurrences for which a specific point of entry could be established. All door or window unstated and 'other' occurrences were not included in the test of independence. The null hypothesis suggests that there is an equal number of observations for each of the points of entry.

The second test determined if windows and doors are selected an equal percentage of times. The null hypothesis would suggest that the occurrences would be evenly distributed between windows and doors. For this test, window unstated and door unstated occurrences were included.

Both null hypotheses were rejected, as revealed by the results listed in Table 12. Employing a .05 probability level the first null hypothesis may be rejected if the obtained X^2 values exceed the critical value of 15.507. The obtained X^2 values far exceed the critical value for the Ottawa Area and the four police districts. We can assert then that some points of entry are more significant than others. The observations are not evenly

distributed for each of the points of entry.

For the second null hypothesis, since the X^2 value for the Ottawa Area and the four police districts is greater than 3.841, which is required for significance at the .05 level, we may reject the null hypothesis. There are significantly more 'door' points of entry than 'window' points of entry.

Table 12

Cni-Square Analysis of Point of Entry

District	Test #1	N	Test #2	N
Ottawa Area	776.09	656	130.40	825
Ottawa Centre	130.98	120	52.06	177
Ottawa West	264.33	161	29.10	231
Ottawa East	357.52	264	49.46	296
Ottawa South	89.21	111	5.58	121

Test #1 degrees of freedom = 8
critical value = 15.507
at the .05 level of significance

Test #2 degrees of freedom = 1
critical value = 3.841
at the .05 level of significance

The data in the point of entry by type of structure cross-tabulations (see Appendix C) reveal that rear doors are the most common point of entry in single family dwellings in two of the four police districts. Rear door (29.6%) is followed by front door (18.3%) as the two most common points of entry in Ottawa Centre for single family dwellings. In Ottawa East, rear door (24.2%) and front door (16.1%) are followed by rear window (14.5%) and

balcony/patio door (11.3%) as the most common points of entry for single family dwellings.

Front door point of entries are most common in Ottawa West in single family dwelling break and enters (22.5%). These are followed by door unstated (15.7%), rear door (13.7%), basement window (12.7%), and rear window (10.8%). Rear window entries (17.6%) are the most common point of entry in single family dwellings in Ottawa South. This is followed closely by rear door (15.7%) and front door (13.7%).

The front door and the rear door were the two most common points of entry in reported low-rise apartment break and enters in three of the four police districts. No data was available in Ottawa South due to the fact that only one low-rise apartment was reported in the district. In over thirty percent of the low-rise break-ins, the front door was reported as the point of entry in the Ottawa Area. Rear door entries constituted 14.9% of the low-rise break and enters.

Front doors were the main points of entry in high-rise apartment break-ins in all four police districts. They ranged from 15.5% of the break and enters in Ottawa Centre to 65.0% of the high-rise break-ins in Ottawa East. In nineteen percent of the high-rise break and enters in Ottawa Centre, the point of entry was recorded as door unstated. It is possible that a portion

of these occurrences may be front door break-ins. If this is the case, it would bring the district's front door figures in line with the Ottawa Area average of 40.4%.

Ottawa South was the only district in which a significant number of townhouse break and enters were reported. Front door entries were reported in 37.0% of the townhouse break-ins, followed by rear windows (19.6%) and patio doors (15.2%).

Cross-tabulations were completed for the variables point of entry by time of day (see Appendix D), resulting in no significant findings. It would appear that time of day had no effect on the selection of point of entry.

Mode of Entry

This variable is concerned with how a premises was entered. Seven modes of entry were outlined in the Methodology Chapter (Operational Definitions). The list includes: i) Forced or pried, ii) Smashed or kicked, iii) Left unlocked, iv) Key or pick, v) No sign of forced or pried entry, vi) Smashed window/unlocked door, and vii) Removed lock.

Forced or pried was the mode of entry in over thirty-five percent of the reported break and enters in the Ottawa Area. This mode of entry is the primary response in all four police districts. There are almost twice as many 'forced or pried' entries than the second most common mode

Table 13

Frequency Analysis of Mode of Entry

	Ottawa Area	Centre	West	East	South
Forced or Pried	35.9%(341)	32.7%(65)	34.3%(94)	38.3%(128)	37.8%(54)
Smashed or Kicked	18.4 (175)	22.6 (45)	16.8 (46)	18.0 (60)	16.8 (24)
Left Unlocked	9.7 (92)	11.6 (23)	6.2 (17)	10.8 (36)	11.2 (16)
Key or Pick	5.7 (54)	7.0 (14)	9.5 (26)	3.0 (10)	2.8 (4)
No Sign Forced Entry	10.6 (101)	7.5 (15)	15.0 (41)	8.7 (29)	11.2 (16)
Smashed Window/Unlocked Door	6.1 (58)	6.0 (12)	5.1 (14)	7.5 (25)	4.9 (7)
Removed Lock	4.9 (47)	3.0 (6)	6.9 (19)	4.8 (16)	4.2 (6)
Other	8.6 (82)	9.5 (19)	6.2 (17)	9.0 (30)	11.2 (16)
Total*	99.9%(950)	99.9%(199)	100% (274)	100.1%(334)	100.1%(143)

*May not equal 100.0% due to rounding

of entry, 'smashed or kicked'. This latter category ranges from a low of 16.8% of the occurrences in Ottawa West and Ottawa South to a high of 22.6% of the occurrences in Ottawa Centre.

As revealed in Table 13 the ranking order of the remaining modes of entry varies from one area to the next. In Ottawa West 'smashed or kicked' is followed closely by "no sign of forced entry'. In fifteen percent of the break and enters reported in Ottawa West, there was no sign of forced entry. Interestingly enough, the next highest mode of entry in Ottawa West is 'key or pick'. In almost ten percent of the incidents in Ottawa West, 'key or pick' was the reported mode of entry. These two modes of entry may be closely related, a possibility that will be dealt with at greater length when reviewing the mode of entry versus type of structure cross tabulation. Only seven percent of dwellings in Ottawa Centre were entered using a key or pick. Even fewer homes were entered using this method in Ottawa East (3.0%) and Ottawa South (2.8%).

More homes were entered through unlocked windows or doors in Ottawa Centre (11.6%), Ottawa South (11.2%), and Ottawa East (10.8%) than in Ottawa West (6.2%). Relatively few homes were entered using the final two modes of entry: smashed window/unlocked door and removed lock. Despite this fact, the inclusion of both smashed window/unlocked door and removed lock as possible responses

can be important in the detection of the modus operandi of criminals. Both modes have been identified by the writer and experienced investigative personnel as the modus operandi of prepared criminals. Should either of these modes of entry become prominent in any particular area this may assist police personnel in identifying the criminal(s) responsible.

In less than ten percent of the break and enter reports an established mode of entry response was not given in three of the four police districts. Only in Ottawa South (11.2%) were the responses greater than ten percent. Unlike point of entry responses, in which non-specific replies made up thirty-one percent of the break and enter reports, the mode of entry data allows for a more detailed analysis. However, this analysis is limited in itself due to the fact that a majority of the residences are reportedly broken into using crude or unrefined means: ie forced or pried, smashed or kicked.

Chi-square tests of independence were performed on the data to determine if each mode of entry is selected an equal number of times. The null hypothesis states that the data will be evenly distributed over the modes of entry. The results in Table 14 indicate that this is not the case. Employing a .05 level of significance the null hypothesis is rejected in all districts since the obtained chi-square values exceed the critical value of 12.592. The

data is not evenly distributed over the modes of entry. The obtained chi-square values far exceed the critical value in all five tests of independence.

Table 14

Chi-Square Analysis of Mode of Entry

District	Test #1	N	Test #2	N
Ottawa Area	535.71	868	33.71	352
Ottawa Centre	107.02	180	10.71	70
Ottawa West	128.56	257	4.11*	76
Ottawa East	221	314	17.73	126
Ottawa South	99.28	127	13.55	49

Test #1 degrees of freedom = 6
critical value = 12.592
at the .05 level of significance

Test #2 degrees of freedom = 4
critical value = 9.488
at the .05 level of significance

As illustrated in Table 13, the modes of entry 'forced or pried' and 'smashed or kicked' make up almost fifty-five percent of the responses in the Ottawa Area. It is not surprising then, that the data is not evenly distributed. A second chi-square test was completed, excluding the 'forced or pried', 'smashed or kicked', and 'other' categories. This null hypothesis suggests that each of the remaining categories are equally likely to be selected as a mode of entry. The results in Table 14 indicate that the null hypothesis would also be rejected in this test. The obtained chi-square values for all tests,

with the exception of Ottawa West, exceed the critical value of 9.488, which is required for significance at the .05 level. The modes of entry are not equally as likely to be selected, however, the obtained chi-square values do not exceed the critical value as significantly as in the previous test. The responses are more evenly distributed over these modes of entry than they are in general.

In Ottawa West 'no sign of forced entry' was also excluded in the second test of independence since in such a large percentage of the occurrences in Ottawa West this mode of entry was reported (15.0%). Employing a .05 probability level the null hypothesis may be rejected if the obtained X^2 value exceeds the critical value of 7.815. The obtained value was 4.11, therefore, the null hypothesis may be accepted. The responses were evenly distributed over the remaining modes of entry.

The cross tabulation of mode of entry by point of entry revealed few surprising patterns (see Appendix E). In general 'forced or pried' and 'smashed or kicked' were the two most common modes of entry for all points of entry. Both doors and windows are twice as likely to be 'forced or pried' than 'smashed or kicked' in the Ottawa Area.

In Ottawa West almost twenty-four percent (19/80) of the front door break-ins were entered using a key or pick. This mode of entry was the second most common method

used for front door break and enters, the first of which was 'forced or pried'. Front door/key or pick break-ins make up almost seven percent of the total number of break and enters in Ottawa West. The data in cross tabulation mode of entry by type of structure for Ottawa West (see Appendix F) reveals that over seventy percent (19/26) of 'key or pick' break-ins occurred in high-rise apartments.

As noted earlier, in fifteen percent of the break-ins reported in Ottawa West no sign of forced entry could be located. Examination of mode of entry by type of structure crosstabulation discloses that 68.3% of the 'no sign forced entry' break-ins occurred in high-rise apartments. The 'no sign forced entry' occurrences may be associated with the 'key or pick' occurrences. In order for the originating police officer to have reported that a key or pick was used there needed to be some form of evidence. At times when there is no sign of forced entry it is suspected that a key or pick was used, however, due to the lack of evidence it is not reported as such. There is some cause for concern since 'key or pick' and 'no sign forced entry' in high-rise apartments constitute 17.1% of the total number of break-ins in Ottawa West, compared to 8.0% in Ottawa Centre, 7.5% in Ottawa East, and 8.4% in Ottawa South.

No significant pattern was revealed when considering the results displayed in the mode of entry by

type of structure cross tabulations (see Appendix F). Single family dwellings were 'forced or pried' or 'smashed or kicked' in order to gain entry. In general these were the two most common modes of entry for all types of structure. There was greater variety in the modes of entry for high-rise apartments compared to the other types of structure. Almost sixty-five percent of all 'no sign of forced entry' took place in high-rise apartments in the Ottawa Area. This was the case in the four police districts. In general, a majority of the removed lock occurrences in each district occurred in high-rise apartments. Not surprisingly, a large majority of the smashed window/unlocked door mode of entries reportedly took place in single family dwellings.

Summary

Chart 1 provides a summary of the findings for the modus operandi variables, for the Ottawa Area and the four police districts, discussed in this chapter. The chart also indicates if the X^2 test of independence is accepted or rejected for each variable.

Chart 2 is a summary of the cross-tabulations completed in this section. The statistical significance of these findings is also indicated in this chart for those crosstabulations in which X^2 tests were completed.

The following is a list of abbreviations used in Charts 1 and 2:

DOW: Day of Week
POW: Portion of Week
TOD: Time of Day
TOS: Type of Structure
POE: Point of Entry
MOE: Mode of Entry

sfd: single family dwelling
high-rise: high-rise apartment
low-rise: low-rise apartment

Chart 1

Summary of Modus Operandi Variables

Mesoecological Analysis

	Ottawa Area	Ottawa Centre	Ottawa West	Ottawa East	Ottawa South	Statistically Significant
DOW	Monday Tuesday Friday	Monday Tuesday Friday	Monday Wednesday Friday	Monday Tuesday Thursday Friday	Monday Tuesday Wednesday	Yes
POW	distributed proportionately across week	distributed proportionately across week	distributed proportionately across week	distributed proportionately across week	distributed proportionately across week	No
TOD	daytime	daytime evening	daytime	daytime	daytime evening	Yes
TOS	sfd high-rise	sfd low-rise high-rise	high-rise sfd	sfd high-rise	sfd townhouse	Yes
POE	front door rear door	front door door unstated rear door	front door door unstated window unstated	front door rear door	front door basement window rear door patio/balcony door	Yes
MOE	forced/pried smashed/kicked no sign forced	forced/pried smashed/kicked left unlocked	forced/pried smashed/kicked no sign forced	forced/pried smashed/kicked left unlocked	forced/pried smashed/kicked no sign forced left unlocked	Yes

Chart 2

Summary of Cross Tabulations

Mesoecological Analysis

	Ottawa Area	Ottawa Centre	Ottawa West	Ottawa East	Ottawa South	Statistically Significant
TOD vs DOW	weekday/daytime weekend/evening	weekday/daytime weekend/evening	weekday/daytime weekend/evening	weekday/daytime weekend/evening	no significant pattern	Yes
TOD vs POW	same as above	same as above	same as above	same as above	weekday: daytime/eve weekend: evening/night	Yes
POE vs TOS	rear door/sfd front door/sfd front door/lowrise rear door/lowrise front door/highrise	same as Ottawa Area	front door/sfd front door/lowrise rear door/lowrise front door/highrise	same as Ottawa Area	rear window/sfd rear door/sfd front door/sfd front door/highrise front door/townhouse rear window/townhouse	Not Completed
POE vs TOD	no	significant	findings			Not Completed
MOE vs POE	forced/pried or smashed/kicked vs all points of entry	same as Ottawa Area	same as Ottawa Area key/pick: Front door	same as Ottawa Area	same as Ottawa Area	Not Completed
MOS vs TOS	no significant pattern	no significant pattern	key/pick-highrise no sign force- highrise	no significant pattern	no significant pattern	Not Completed

Community Analysis: Introduction

At the conclusion of the test period, three census tracts were identified as having a 'high' break and enter rate. As noted earlier, a 'high' break and enter rate refers to those census tracts with a break and enter rate twice the estimated annual rate for the City of Ottawa, 1482 occurrences/100,000 people. During the test period, forty-four occurrences were reported in High A. Projecting this over twelve months a break and enter rate of 3482 occurrences/100,000 is calculated based on the tract's 1981 Census Canada population of 5054. High B had a reported rate of 5034 occurrences/100,000 people during the test period. Thirty-seven occurrences were reported in this census tract of 2940 people. Over a twelve month period High B's rate is estimated to be more than three times the City of Ottawa rate. Thirty-one occurrences were reported in the third tract, High C. Based on a population of 3412, the census tract's break and enter rate would be approximately 3634 occurrences/100,000 occurrences over twelve months.

All three census tracts are located in the Ottawa East police district. The following section will involve a descriptive analysis of the findings for the three census tracts, with comparisons to Ottawa East.

Findings

Day of the Week

Thursday (18.2%) and Friday (25.0%) were the two most frequently reported days of the week on which break-ins occurred in High A. No other day of the week was reported as frequently. In High B no real pattern was revealed. As indicated in Table 15 the three most frequently reported days were Thursday (13.5%), Friday (18.9%), and Sunday (13.5%). Thursday and Friday constitute 32.4% of the break and enters in High. In High C the occurrences are generally evenly distributed. The occurrences that reportedly took place on Tuesday, Wednesday, and Thursday make up 48.3% of the break and enters in High C. Thursday (14.1%) and Friday (14.4%) were the two most frequently reported days of the week in which break-ins occurred in Ottawa East, as was the case in both High A and B. A slightly greater percentage of break-ins occurred on Monday's and Tuesday's in Ottawa East (24.9%) than in High A (13.6%) or High B (18.9%). A comparable percentage of break and enters occurred on Monday and Tuesday in High C (25.8%), however, fewer occurrences reportedly took place on Wednesday in Ottawa East (6.6%) than in High C (16.1%).

Chi-square tests of independence were performed to determine if a systematic relationship does exist. The null hypothesis suggests that the occurrences would be

evenly distributed over the days of the week. The results are displayed in Table 16.

Table 15

Frequency Analysis of Day of the Week

	High A	High B	High C	Ottawa East
Monday	4.5%(2)	8.1%(3)	9.7%(3)	12.9%(43)
Tuesday	9.1 (4)	10.8 (4)	16.1 (5)	12.0 (40)
Wednesday	4.5 (2)	5.4 (2)	16.1 (5)	6.6 (22)
Thursday	18.2 (8)	13.5 (5)	16.1 (5)	14.1 (47)
Friday	25.0 (11)	18.9 (7)	3.2 (1)	14.4 (48)
Saturday	6.8 (3)	8.1 (3)	3.2 (1)	8.1 (27)
Sunday	9.1 (4)	13.5 (5)	9.7 (3)	7.2 (24)
Other	22.7 (10)	21.6 (8)	25.8 (8)	24.9 (83)
Total*	99.9%(44)	99.9%(37)	99.9%(31)	100.1%(334)

*May not equal 100.0% due to rounding

Employing = .05 the null hypothesis may be rejected if the obtained value is greater than or equal to 12.592. As noted in the mesoanalysis the null hypothesis is rejected for Ottawa East. It may also be rejected in High A. A significant percentage of the incidents in High A reportedly occurred on Thursday and Friday. The null hypothesis was accepted in High B and C. The occurrences, for which a day of the week is known, are evenly

distributed over the days of the week. The significance of these findings is limited though, due to the small sample size for the census tracts.

Table 16

Chi-Square Analysis of Day of the Week

Area	X^2	N
High A	14.17	34
High B	4.07	29
High C	5.91	23
Ottawa East	20.94	251

degrees of freedom = 6
critical value = 12.592 at the .05 level of significance

The variable, portion of the week, was included in the analysis in determining if break and enter is a weekday or weekend phenomenon. As noted in Table 15, in 21.6% to 25.8% of the occurrences in the three High tracts the day of the week of the break and enter is either not known or can not be narrowed down to one specific day of the week. Despite not being able to determine the day of the week, it may be possible to determine the portion of the week in which the break and enters occurred. Upon initial examination of the results displayed in Table 17, it would appear that break and enter is a weekday phenomenon in the three High tracts. In order to test this notion, chi-square tests were performed on the portion of week data. Only those occurrences in which a specific portion

of the week could be established were included in the analysis. All 'other' occurrences were excluded. The null hypothesis suggests that the occurrences should be distributed in direct proportion to the length in days of each category. Since 'Weekday' is comprised of 4.75 days it is expected that 67.86% of the known occurrences will take place during this portion of the week and 32.14% (2.25 days) will occur during the 'Weekend'.

Table 17

Frequency Analysis of Portion of the Week

	High A	High B	High C	Ottawa East
Weekday	59.1%(26)	59.5%(22)	64.5%(20)	62.0%(207)
Weekend	20.5 (9)	32.4 (12)	22.6 (7)	27.2 (91)
Other	20.5 (9)	8.1 (3)	12.9 (4)	10.8 (36)
Total*	100.1%(44)	100.0%(37)	100.0%(31)	100.0%(334)

Weekday is from 2400 Monday to 1759 Friday
Weekend is from 1800 Friday to 2359 Sunday
*May not equal 100.0% due to rounding

As illustrated in Table 18 the null hypothesis is accepted on all tests, since the obtained chi-square values are less than 3.841, which is required for significance at the .05 level. Despite appearing to be a weekday

phenomenon, break and enters are proportionately distributed over weekdays and weekends.

Table 18

Chi-Square Analysis of Portion of the Week

Area	X^2	N
High A	.29	35
High B	.04	34
High C	.24	27
Ottawa East	.28	298

degrees of freedom = 1
critical value = 3.841 at the .05 level of significance

Time of Day

The greatest portion of occurrences, for which the time of day can be determined, identify 'daytime' as the time of day. Over forty percent of the occurrences in High A (43.2%) and High B (40.5%) took place during the daytime, slightly above the district average of 39.2%. Evening break-ins range from 13.5% in High B, to 16.1% in High C, and 18.2% in High A. A greater percentage of break-ins took place during the night in High C (12.9%) and High B (13.5%) compared to 8.1% of the occurrences in Ottawa East. Night break and enters are below the Ottawa East average in High A, with only 4.5% of the occurrences reportedly taking place between 2400 hours and 0659 hours.

Table 19

Frequency Analysis of Time of Day

	High A	High B	High C	Ottawa East
Daytime	43.2%(19)	40.5%(15)	35.5%(11)	39.2%(131)
Evening	18.2 (8)	13.5 (5)	16.1 (5)	18.9 (63)
Night	4.5 (2)	13.5 (5)	12.9 (4)	8.1 (27)
Other	34.1 (15)	32.4 (12)	35.5 (11)	33.8 (113)
Total*	100.0%(44)	99.9%(37)	100.0%(31)	100.0%(334)

*May not equal 100.0% due to rounding

In order to determine the significance of the time of day data, chi-square tests of independence were completed. As was the case in the 'portion of the week' tests, the occurrences are expected to be distributed in direct proportion to the length in hours of each category: daytime 11/24 or 45.83%, evening 6/24 or 25.0%, and night 7/24 or 29.17%.

The results, displayed in Table 20, indicate that the null hypothesis is accepted for High B and High C. The percentage of occurrences taking place during each time category is proportionately distributed to the length in hours of each category. Employing = .05 the critical region consists of all chi-square values greater than or equal to 5.991. Since the obtained chi-square values for High A and Ottawa East are greater than the critical value,

the null hypothesis may be rejected. Occurrences are not distributed in direct proportion to the length of each time category.

Table 20

Chi-Square Analysis of Time of Day

Area	X^2	N
High A	7.46	29
High B	2.06	25
High C	0.94	20
Ottawa East	75.73	221

degrees of freedom = 2
critical value = 5.991 at the .05 level of significance

Despite the fact that the null hypothesis is rejected in the High A test and the Ottawa East test, it may be incorrect to suggest that break and enter is a daytime phenomenon in these areas. The null hypothesis was rejected due in part to the low percentage of night break-ins recorded and not simply a disproportionate percentage of daytime occurrences. There is some concern for the significance of the time of day findings since in almost one-third of the occurrences in the three High tracts and Ottawa East the time of day could not be established.

Cross tabulations were completed for the variables time of day by day of the week for the three High tracts (see Appendix G). As noted earlier, Thursday and Friday

were the two most frequently reported days of the week in High A. Over seventy percent of the incidents reported during these days occurred during the daytime. Thursday and Friday daytime occurrences were also the trend in High B. Sunday was also frequently reported in High B, however, a majority of these occurrences took place during the night (3 of 5 occurrences). The middle of the week were the most frequently reported days in High C. Tuesday and Thursday were daytime break and enters and a majority of the occurrences on Wednesday reportedly took place during the night.

Cross tabulations were also completed for the variables time of day by portion of the week (see Appendix H). A review of this data reveals that in general break and enter is a weekday/daytime phenomenon in all three High tracts. This was also the case in Ottawa East. In order to determine whether a relationship exists between these three variables chi-square tests were performed for time of day by day of week and time of day by portion of week. Only those observations which could be placed into a category in both time of day and day of the week or time of day and portion of the week were included in the calculations of the chi-squares. Those observations which fell into anyone of the 'other' categories in the three variables in question were not included.

Table 21

Chi-Square Analysis of Time of Day Cross-Tabulations

Area	TOD by DOW X^{2*}	TOD by POW X^{2**}	N
High A	42.54	16.64	29
High B	19.84	6.04	25
High C	28.74	7.40	20
Ottawa East	90.66	93.93	221

Time of Day by Day of Week*
degrees of freedom = 12
critical value = 21.026 at the .05 level of significance

Time of Day by Portion of Week**
degrees of freedom = 2
critical value = 5.991 at the .05 level of significance

The null hypothesis for these cross tabulations were identical to the chi-square tests completed in the mesoanalysis. The null hypothesis for the time of day by day of the week crosstab suggests that break and enters are evenly distributed over each day of the week by the time of day.

The null hypothesis for the time of day by portion of the week crosstabulation also suggests that the break and enters are evenly distributed over the portion of the week by the time of day.

Inspection of Table 21 reveals that the time of day by day of week null hypothesis is rejected in three of the four tests. In High B the null hypothesis is accepted. This is not surprising since in the chi-square tests of day of the week and of time of day alone, the null

hypotheses were accepted. Break and enters are evenly distributed over each day of the week by the time of day in High B.

The null hypothesis was rejected for High A and High C. The obtained chi-square values are greater than 21.026, required for significance at the .05 level. In High A the most obvious pattern that was revealed was Thursday and Friday daytime occurrences.

Despite the fact that the null hypotheses for both the chi-square analysis of day of week and chi-square analysis of time of day in High C was accepted, the null hypothesis for the 'time of day by day of week' analysis was rejected, suggesting a relationship between the two variables. Review of the data in Appendix G for High C reveals a pattern of Tuesday/daytime, Wednesday/night, and Thursday/daytime break and enters. However, the strength of this relationship is weak, due to the limited number of observations.

For the second tests, time of day by portion of the week, the X^2 values for the three High tracts are greater than 5.991, which is required for significance at the .05 level, therefore, we may reject the null hypothesis. A relationship exists between the variables time of day and portion of the week. Closer examination of the data in Appendix H suggests that the most prominent pattern in the three High tracts would be weekday/daytime

break and enters. Over forty percent of the reported break and enters in High A fall into this category. Weekday/daytime break-ins constitute 32.4% of the occurrences in High B and 35.5% in High C. The higher the percentage of reported weekday/daytime break-ins in the three tracts, the larger the obtained X^2 value has been. Weekday/daytime break and enters are also prominent in Ottawa East, with 36.2% of the reported break and enters occurring during this period.

Type of Structure

A review of Table 22 reveals that high-rise apartments appear to be the most frequently reported type of structure for break and enters in the three High tracts. High-rise break-ins range from almost sixty percent in High B to 32.3% in High C. Break-ins are more evenly distributed over the types of structure in High C. High-rise break-ins are closely followed by single family dwelling (29.0%) and low-rise apartment (29.0%) occurrences.

Single family dwellings are the second most frequently reported targets in both High A (31.8%) and High B (16.2%). Low-rise apartments are reportedly broken into infrequently in High A (15.9%) and High B (10.8%). Relatively few break-ins to townhouses or rowhouses were reported in the three High tracts during the test period.

Table 22

Frequency Analysis of Type of Structure

	High A	High B	High C	Ottawa East
Single Family Dwelling	31.8%(14)	16.2%(6)	29.0%(9)	37.1%(124)
Low-Rise Apartments	15.9 (7)	10.8 (4)	29.0 (9)	23.7 (79)
High-Rise Apartments	52.3 (23)	59.5 (22)	32.3 (10)	34.7 (116)
Townhouses	0.0 (0)	8.1 (3)	9.7 (3)	3.3 (11)
Rowhouses	0.0 (0)	5.4 (2)	0.0 (0)	0.9 (3)
Other	0.0 (0)	0.0 (0)	0.0 (0)	0.3 (1)
Total	100.0%(44)	100.0%(37)	100.0%(31)	100.0%(334)

The High C data is most similar to the Ottawa East data, in terms of types of structure entered, in that the break-ins are fairly distributed over the three main types of structure: single family, low-rise apartments, and high-rise apartments. A majority of the reported break and enters in High A and High B occur in high-rise apartments.

As in the mesoanalysis section, the residential compositions of the three High tracts was obtained from the 1981 Canadian Census. The information is displayed in Table 23. There are relatively few single family dwellings in the three High tracts and in Ottawa East in general. Low-rise and high-rise apartments constitute greater than fifty percent of the dwellings in Ottawa East and the three High tracts. Almost sixty-five percent of the dwellings in

High B were high-rise apartments.

Table 23

Residential Composition of Selected Areas

	High A	High B	High C	Ottawa East
Single Family Dwelling	12.47%	2.84%	4.62%	18.3%
Low-Rise Apartments	40.85	18.61	25.74	23.8
High-Rise Apartments	28.37	64.98	30.36	31.1
Other	18.31	13.56	39.27	26.7

Chi-square tests of independence were performed to determine if the reported break and enters were distributed in proportion to the residential composition of the three High tracts. Employing a .05 probability level the null hypothesis may be rejected if the obtained chi-square values are greater than or equal to the critical value of 7.815. Examination of Table 24 reveals that the null hypothesis may be rejected for the tests in all areas. The distribution of break and enters was not in proportion to the residential composition of the High tracts and Ottawa East during the test period.

Table 24

Chi-Square Analysis of Type of Structure

Area	X^2	N
High A	36.82	44
High B	24.72	37
High C	47.15	31
Ottawa East	127.81	334

degrees of freedom = 3
critical value = 7.815 at the .05 level of significance

Despite the fact that the hypothesis was rejected there remains one similarity worth noting when comparing the reported break-ins and the composition of the High tracts. The percentage of high-rise apartment break-ins in High B (59.5%) is not surprising considering the fact that high-rise apartment units constitute almost sixty-five percent of the dwellings in this tract. A disproportionate percentage of single family dwellings were reportedly entered, in relation to the low percentage of composition in these areas. The converse of this finding is that few 'other' dwellings were broken into despite the fact that they constitute a relatively large percentage of the types of structure in the areas. These facts are two suggestions as to why the null hypothesis was rejected.

Point of Entry

Front doors were reported as the point of entry in more than thirty-five percent of the break and enters in

the three High tracts and Ottawa East. Window unstated is the second most common point of entry in High A (15.9%), followed by rear door (13.6%). In High B rear window is the second most frequently reported point of entry (13.5%), followed by patio/balcony door (10.8%). Rear door is the second most common point of entry in High C (12.9%). The remaining categories were infrequently chosen as points of entry, however, in total they constitute a large percentage of the occurrences.

Front door point of entries were reported most frequently in all three High tracts and Ottawa East. In addition, a comparable percentage of rear door entries were reported in High A and C and in Ottawa East. As noted in Table 25, 'door' entries constitute greater than fifty percent of the reported points of entry in these areas. 'Window' entries range from a low of twenty-five percent of the occurrences in High A to 32.4% in High B.

Two separate chi-square tests of independence were completed for the point of entry data. The first test involved those occurrences for which a specific point of entry could be established. All door or window unstated and 'other' occurrences were not included in the test. The null hypothesis suggests that each point of entry is selected an equal number of times.

Table 25

Frequency Analysis of Point of Entry

	High A	High B	High C	Ottawa East
Front Door	40.9%(18)	43.2%(16)	35.5%(11)	35.6%(119)
Side Door	0.0 (0)	0.0 (0)	3.2 (1)	3.3 (11)
Rear Door	13.6 (6)	0.0 (0)	12.9 (4)	13.8 (46)
Patio/Balcony	4.5 (2)	10.8 (4)	3.2 (1)	6.9 (23)
Door Unstated	2.3 (1)	0.0 (0)	3.2 (1)	3.0 (10)
Front Window	0.0 (0)	0.0 (0)	3.2 (1)	0.3 (1)
Side Window	0.0 (0)	8.1 (3)	6.5 (2)	5.7 (19)
Rear Window	6.8 (3)	13.5 (5)	0.0 (0)	7.8 (26)
Balcony Window	2.3 (1)	0.0 (0)	6.5 (2)	0.9 (3)
Basement Window	0.0 (0)	5.4 (2)	6.5 (2)	4.8 (16)
Window Unstated	15.9 (7)	5.4 (2)	3.2 (1)	6.6 (22)
Other	13.6 (6)	13.5 (5)	16.1 (5)	11.4 (38)
Total*	99.9%(44)	99.9%(37)	100.0%(31)	100.1%(334)
Door (Total)	61.4 (27)	54.0 (20)	58.1 (18)	62.6 (209)
Window (Total)	25.0 (11)	32.4 (12)	25.8 (8)	26.1 (87)

*May not equal 100.0% due to rounding

The second test performed determined if windows and doors are selected for an equal percentage of incidents. The null hypothesis would suggest the occurrences would be evenly distributed between windows and doors. For this test both 'window unstated' and 'door unstated' occurrences were included.

Table 26

Chi-Square Analysis of Point of Entry

Area	Test #1	N	Test #2	N
High A	82.28	30	5.92	38
High B	63.06	30	1.54	32
High C	32.96	24	3.12	26
Ottawa East	357.52	264	49.46	296

Test #1 degrees of freedom = 8
critical value = 15.507
at the .05 level of significance

Test #2 degrees of freedom = 1
critical value = 3.841
at the .05 level of significance

The results, found in Table 26, reveal that the first null hypothesis may be rejected, since the obtained X^2 values exceed the critical value of 15.507. We can assume then that some points of entry are more significant than others. Each point of entry is not reported an equal number of times.

For the second test the null hypothesis may be rejected if the obtained chi-square values are greater than or equal to the critical value of 3.841. The null hypothesis may be rejected for High A and Ottawa East, but is accepted for High B and High C. In High B and High C the observations are distributed relatively evenly between windows and doors. High A, however, is more similar to Ottawa East in general, in that there are significantly more 'door' point of entry occurrences than 'window' point of entry reports.

As noted earlier in Ottawa East rear door (24.2%) and front door (16.1%) are followed by rear window (14.5%) and balcony/patio door (11.3%) as the most common points of entry for single family dwellings. The data in the point of entry by type of structure cross-tabulations for the three High tracts (see Appendix I) reveals that rear door is the most common point of entry to single family dwellings in two of the three tracts. In High A, rear door (35.7%) is followed by front door (21.4%) and rear window (21.4%). High A is most similar to Ottawa East in terms of selection of points of entry. Rear door (33.3%) is also reported most frequently as the point of entry to single family dwellings in High C. The remaining single family dwelling occurrences in High C were distributed over a number of different points of entry.

In High B the most common point of entry to single family dwellings is patio/balcony doors (50.0%) followed by rear windows (33.3%). Despite the fact that the most common points of entry in single family dwellings are different in the three High tracts, the tracts most common points are among the four most common points of entry to single family dwellings in Ottawa East.

Front door points of entry are most common in High A low-rise apartment break and enters (42.9%) and High C low-rise apartments occurrences (22.2%). Basement windows entries (22.2%) were also reported frequently in High C.

The limited number of low-rise break-ins reported in High B did not allow for any analysis. Front door and rear door were the two most common points of entry in reported low-rise apartment break and enters in Ottawa East, and the Ottawa Area in general.

Front doors were the main points of entry in high-rise apartment occurrences in the three High tracts, ranging from fifty percent of the break and enters in High C to 68.2% of the high-rise occurrences in High B. Front doors were also the main point of entries in high-rise apartments break-ins in all four police districts.

Due to the limited number of townhouse and rowhouse break and enters in the three High tracts no analysis was completed for the point of entry by type of structure cross tabulations. Although a relationship may exist between these two variables for the three main types of structure, the strength of the relationship is restricted by the low number of occurrences reported in each tract.

Mode of Entry

Forced or pried was the most common mode of entry reported in two of the three census tracts. In High B greater than forty percent of the reports indicated 'forced or pried' as the mode of entry. This category far exceeds the second most common response in High B: left unlocked

(16.2%). Forced or pried is also reported most frequently in High C (22.6%), however, this is closely followed by 'smashed or kicked' (19.4%). High A is the reverse of High C. In High A 'smashed or kicked' is reported most frequently (31.8%), followed closely by 'forced or pried' (27.3%).

Table 27

Frequency Analysis of Mode of Entry

	High A	High B	High C	Ottawa East
Forced or Pried	27.3%(12)	40.5%(15)	22.6%(7)	38.3%(128)
Smashed or Kicked	31.8 (14)	10.8 (4)	19.4 (6)	18.0 (60)
Left Unlocked	9.1 (4)	16.2 (6)	6.4 (2)	10.8 (36)
Key or Pick	2.3 (1)	2.7 (1)	6.4 (2)	3.0 (10)
No Sign Forced Entry	11.4 (5)	8.1 (3)	12.9 (4)	8.7 (29)
Smashed Window/ Unlocked Door	9.1 (4)	8.1 (3)	9.7 (3)	7.5 (25)
Removed Lock	2.3 (1)	0.0 (0)	3.2 (1)	4.8 (16)
Other	6.8 (3)	13.5 (5)	19.4 (6)	9.0 (30)
Total*	100.1%(44)	99.9%(37)	100.0%(31)	100.1%(334)

*May not equal 100.0% due to rounding

'No sign forced entry' mode of entries accounted for 11.4% of the reported occurrences in High A and 12.9% of the break and enters in High C. This is above the Ottawa East total of 8.7% of the occurrences. High B

(8.1%) is slightly below its district's percentage.

A relatively equal percentage of homes in the three High tracts were entered through 'smashed window/unlocked door' in comparison with Ottawa East. Few homes were entered in either the three High tracts or Ottawa East using the final two modes of entry: 'key or pick' and 'removed lock'. In nine percent of the break and enter reports in Ottawa East an established mode of entry response was not given. This varied in each High tract: 6.8% of the reports in High A, 13.5% in High B, and 19.4% in High C.

Table 28

Chi-Square Analysis of Mode of Entry

Area	Test #1	N	Test #2	N
High A	27.11	41	4.67	15
High B	32.76	32	8.07*	17
High C	8.32	25	2.17	12
Ottawa East	221.00	314	17.73	126

Test #1 degrees of freedom = 6
critical value = 12.592
at the .05 level of significance

Test #2 degrees of freedom = 4
critical value = 9.488
at the .05 level of significance

Chi-square tests of independence were performed on the data to determine if each mode of entry is selected an equal number of times. The null hypothesis suggests that the data will be evenly distributed over the modes of

entry. Examination of the results in Table 28 (Test #1) reveals that this is not necessarily the case. Employing a .05 level of significance the null hypothesis is rejected in High A, High B, and Ottawa East, since the obtained chi-square values exceed the critical value of 12.592. The data is not evenly distributed over the modes of entry. Only in High C is the null hypothesis accepted. This may be due to the fact that almost twenty percent of the occurrences in High were not included in the test because the mode of entry was either not known or no 'established' response was given. Had the mode of entry for some of these occurrences been known, their inclusion may have effected the outcome of the test.

Given the fact that the modes of entry 'forced or pried' and 'smashed or kicked' constitute over fifty percent of the responses in High A and B and Ottawa East, it is expected that the null hypothesis would be rejected in these areas. A second chi-square test was completed to determine if the occurrences were evenly distributed over the remaining categories. 'Forced or pried', 'smashed or pried', and 'other' responses were excluded from this test. The results in Table 28 indicate that the null hypothesis would be accepted in all three High tract tests and rejected only in the Ottawa East test. The obtained X^2 value in Ottawa East exceeds the critical value of 9.488, which is required for significance at the .05

level. The responses in the three High tracts are more evenly distributed over these modes of entry than the response are in Ottawa East. As noted earlier in the mesoanalysis, the obtained X^2 value for Ottawa East in Test #2 does not exceed the critical value as significantly as in the previous test.

In High B the only established mode of entry excluded in the second test of independence was 'forced or pried' due to the fact that this mode of entry was by far the only common response (40.5%). Employing a .05 probability level the null hypothesis may be rejected if the obtained X^2 value is greater than or equal to the critical value of 11.070. The obtained value was 8.07, therefore, the null hypothesis may be accepted. The responses were evenly distributed over the remaining modes of entry.

No significant pattern was revealed when reviewing the results displayed in the mode of entry by point of entry cross tabulations (see Appendix J). 'Forced or pried' was the most common mode of entry for the most common point of entry, 'front door', in all three High tracts. Front doors were reportedly entered as frequently by 'smashed or kicked' as 'forced or pried' in High A (38.9%). Almost sixty percent of the 'window unstated' point of entries were 'left unlocked' in High A. In one half of the rear door entries (3 of 6) entry was gained by

smashing the window in the door and then unlocking it. This mode of entry was also used in seventy-five percent (3 of 4) of the patio/balcony doors in High B.

Cross tabulations of the variables mode of entry by type of structure were also completed for the three High tracts (see Appendix K). Once again, the low number of observations in each High tract limited the significance of these cross tabulations. Single family dwellings in High A were reportedly entered most frequently by 'forced or pried' (42.9%), 'smashed or kicked' (28.6%) or 'smashed window/unlocked door' (21.4%). Low-rise apartments were entered most frequently by 'smashed or kicked' (42.9%). 'Smashed or kicked' was also the most frequently reported mode of entry for high-rise apartments in High A (30.4%), followed closely by 'forced or pried' (26.1%), and 'no sign forced entry' (21.7%).

In High B the only finding worth noting is that almost sixty percent of the high-rise apartments are entered by a 'forced or pried' mode of entry. In High C no pattern was revealed for mode of entry vs. type of structure.

'Forced or pried' and 'smashed or kicked' were predominantly the main modes of entry for all types of structures in Ottawa East. There was also greater variety in the modes of entry for high-rise apartments compared to

the other types of structure. These findings are not reflected in those of the three High tracts.

Analysis of Factors Associated with Residential Break and Enter

As noted earlier in this paper, the main objective of this study, is to provide specific knowledge of residential break and enter in Ottawa and Vanier, from which strategies can be developed to combat this crime. In addition to the 'where, when, and how' information provided in the previous section, it would be both interesting and informative to consider some of the demographic factors which have been shown to be associated with residential break and enter, as outlined in the literature review section of this paper.

The three concepts of break and enter causation introduced earlier will be used to direct discussion: i) Crime as Opportunity, ii) Crime and Opportunity, and iii) Crime of Opportunity. 'Crime as Opportunity' focuses on the socio-physical characteristics of the residence and the role they play in residential break and enter rates. 'Crime and Opportunity' deals with the presence of potential offenders and the assumption that those areas with, or close to, large criminal populations will experience correspondingly high crime rates. 'Crime of

Opportunity' focuses on the attractiveness of an area as a target. The affluence of neighbourhoods and the relative availability of goods to be stolen is believed to be a determining factor in burglars' selection from available targets.

The three identified 'High' tracts will be compared to a 'low' rate area. For the purpose of this comparison a low rate refers to those census tracts with a break and enter rate one-half or less the annual rate for the City of Ottawa. As noted earlier, the calculated annual rate is 1482 occurrences per 100,000 population. The low rate area chosen had a break and enter rate of 0.48 times that of the City of Ottawa rate, with an estimated rate of 712 occurrences per 100,000 over the entire year. The area, hereafter called Ottawa Low, is located in the police district of Ottawa East and was outlined geographically using points such as major roadways, city boundaries and the Ottawa River. This defined area is composed of five census tracts. The break and enter rate of each <u>individual</u> census tract is less than the City of Ottawa rate.

One question that often comes to mind when reviewing break and enter data is why one area has a greater percentage of residences broken into than the next. Is there something about the people or the homes in one area that makes it a more viable or suitable target?

This section attempts to address such questions by comparing the socio-demographic features of the 'high' break and enter census tracts to an area identified as having a 'low' residential break and enter rate.

Demographic data have been obtained from the 1981 Canadian Census for comparison. In order to avoid identifying the specific location of Ottawa Low the actual combined figures for the area will not be displayed. Instead the differences between the percentages of each of the High tracts and Ottawa Low will be used in the analyses. The combined demographic figures for each of the five census tracts which comprise Ottawa Low will be compared to the High tracts. Refer to Appendix L for definitions of such terms as Census Family, Private Household, and Population Density which will be used in the following sections.

Crime as Opportunity

a) Degree of Occupancy

As noted in the literature review, it has been suggested in numerous studies that when someone is present in a residence for most of the time the residence is less likely to become a target for a break-in. Using Canada Census Data, three measures were constructed to examine this proposition: I) Percent Census Families in Private Households with $\geq$ 2 in Labour Force, II) Percent Husband-Wife Families with both in Labour Force, and III)

Percent Lone-Parent Families with some members in Labour Force.

In the data analysis section of this thesis it was noted that in general break and enter is a daytime phenomenon during the test period in the three High tracts and Ottawa East, in which Ottawa Low is located. With this in mind labour force data was used in the measures of occupancy. A basic assumption is made by the writer that those in the labour force are absent during the daytime hours, since no differentiation as to time of day is made in the Census Data.

Table 29

Percent Occupied Units in High Tracts Relative to Ottawa Low

	I	II	III
High Tract			
A	-3.0%	+5.6%	-11.3%
B	-21.1	-16.1	-19.4
C	-25.1	-15.2	-20.9

Households in which two or more members are in the labour force stand a greater chance of being broken into because they are presumably unoccupied for a greater percentage of the day than those households in which one or no member is in the labour force. Following this line of reasoning one would assume that the High tracts would have a greater percentage of their resident families with two or more in the labour force than the Low Area. Table 29

reveals that this is not the case with respect to Measure 1. There are three percent fewer households in High A with two or more members in the labour force than in Ottawa Low. High B and High C have greater than twenty percent fewer households with two or more members in the labour force compared to Ottawa Low. Despite the High tracts having a greater measure of occupancy, since fewer members are in the labour force, the High tracts experience a higher rate of break and enter.

Measures II and III also deal with family members in the labour force. The basic assumption made for Measure II would be that those areas with a greater percentage of husband-wife families with both in the labour force would be unoccupied for a greater percentage of the day, making the households in such areas more susceptible to break and enters. The figures found in Table 29 suggest that this may not be so. High A has a slightly higher percentage of husband-wife families with both in the labour force (+5.6%), implying that a greater percentage of the households are unoccupied. High B and High C, however, have a greater degree of occupancy using this measure. High B and High C have a greater measure of occupancy and therefore should be <u>less</u> susceptible, working on this basic assumption.

The premise of Measure III suggests that those areas with a greater percentage of lone-parent families

with some members in the labour force would be unoccupied for a greater percentage of the day. Although it can not be determined which member of the lone-parent family is in the labour force, these figures were incorporated into the measure of occupancy in order to ensure non-traditional households were included in the measurement. The results found in Table 29 on Measure III indicate that all three High tracts have a lower percentage of lone-parent families with some members in the labour force than Ottawa Low, implying a higher incidence of occupancy. Degree of Occupancy therefore does not appear to be a factor associated with break and enters in the three High tracts. In general, Degree of Occupancy is not a factor in any of the three measures employed. The high break-in rate experienced in High A, B, and C cannot be attributed to this measure of crime as opportunity.

b) Surveillance Level of Residence

Surveillance level was a second factor discussed in the literature review section of this thesis. The evidence emphasized the importance of the visibility of points of entry as a factor associated with residential break and enter rates. For the purpose of this exercise the frequency analysis for point of entry for the three High tracts were compared with the frequency analysis for Ottawa Low.

Front door point of entries were reported most frequently in all three High tracts and Ottawa Low. A comparable percentage of rear door entries were reported in High A and High C and in Ottawa Low. Patio/Balcony doors were reported in more than ten percent of the break and enters in High B. As revealed in Table 30, 'door' entries constitute greater than fifty percent of the reported points of entry in the three High tracts and Ottawa Low. Eighty percent of the points of entry reported in Ottawa Low occurrences were doors. In addition, greater than ten percent fewer 'window' point of entries were reported in Ottawa Low than the three High tracts.

In general, 'door' responses are the most significant points of entry reported in the four areas, with front and rear doors being reported most frequently. As you may recall, a chi-square analysis of point of entry for the three High tracts was completed in the previous section (see Table 26). The null hypothesis suggested that each point of entry is selected an equal number of times. The null hypothesis was rejected in all three High tracts, implying that some points of entry are more significant than others, as is the case with front door and rear door points of entry in this analysis.

There would appear to be no distinguishable pattern revealed in the Point of Entry data. Ten to sixteen percent more break-ins reportedly took place at

front doors in Ottawa Low than in the three High tracts. Rear door break-ins are the second most frequently reported points of entry in High A, High C, and Ottawa Low. No rear door break-ins were reported in High B during the test period, however, more patio/balcony door and rear window break-ins were reported in High B than the other areas.

The most notable difference in the Point of Entry data is the difference revealed in the comparison of the percentages of door and window break-ins in Ottawa Low versus the three High tracts. In eighty percent of the reported break-ins in Ottawa Low entry was gained through a door. This compares to 61.4% in High a, 54.0% in High B and 58.1% in High C, a difference of 18.6% to 26.0%. Window break and enters occur ten to eighteen percent more frequently in the High tracts than in Ottawa Low. This might suggest that the surveillance level of the residences in the High tracts is poorer than in Ottawa Low and attributes to the high rates experienced in these tracts. However, this finding is somewhat inconclusive.

Unlike other studies that address this factor (Waller and Okihiro, 1978; Winchester and Jackson, 1982) the point of entry information available from police reports used in this test did not include such information as distance from roadway, obscured view (ie bushes, fences, etc.), proximity to neighbours, and the availability of surveillance points. This analysis included reported break

and enters and makes no comparison of these victims to non-victims' residence. The writer acknowledges these omissions and in doing so recognizes the limitations of the conclusions made above.

Degree of occupancy and surveillance level were the two factors discussed in the literature review of Crime as Opportunity which were shown to be associated with break and enter rates. Based on the information discussed above, degree of occupancy would not appear to be a factor associated with the high break and enter rate experienced during the test period. A weak association was shown to exist between the surveillance level of the residences in the High tracts and the high residential break and enter rate.

Table 30

Frequency Analysis of Point of Entry for High Tracts and Ottawa Low

	High A	High B	High C	Ottawa Low
Front Door	40.9%(18)	43.2%(16)	35.5%(11)	51.4%(18)
Side Door	0.0 (0)	0.0 (0)	3.2 (1)	5.7 (2)
Rear Door	13.6 (6)	0.0 (0)	12.9 (4)	11.4 (4)
Patio/Balcony	4.5 (2)	10.8 (4)	3.2 (1)	5.7 (2)
Door Unstated	2.3 (1)	0.0 (0)	3.2 (1)	5.7 (2)
Front Window	0.0 (0)	0.0 (0)	3.2 (1)	0.0 (0)
Side Window	0.0 (0)	8.1 (3)	6.5 (2)	0.0 (0)
Rear Window	6.8 (3)	13.5 (5)	0.0 (0)	8.6 (3)
Balcony Window	2.3 (1)	0.0 (0)	6.5 (2)	0.0 (0)
Basement Window	0.0 (0)	5.4 (2)	6.5 (2)	5.7 (2)
Window Unstated	15.9 (7)	5.4 (2)	3.2 (1)	0.0 (0)
Other	13.6 (6)	13.5 (5)	16.1 (5)	5.7 (2)
Total*	99.9 (44)	99.9 (37)	100.0 (31)	99.9 (35)
Door (Total)	61.4 (27)	54.0 (20)	58.1 (18)	80.0 (28)
Window (Total)	25.0 (11)	32.4 (12)	25.8 (8)	14.3 (5)

*May not equal 100.0% due to rounding

Crime and Opportunity

a) Offender Population

In the literature review section it was noted that social and economic factors have frequently been cited in research as contributing to the formation of a criminal population. Further, an assumption exists that areas with, or close to, large criminal populations will sustain correspondingly high crime rates. To examine this assumption three measures were formed using Canada Census Data: I) Incidence of Low Income Economic Families, II) Average Private Household Income, and III) Population Density by Square Kilometre. Measure I will compare the percentage of the incidence of low income families in the High tracts to Ottawa Low. Measure II will display the percentage differences between the average private household income of the High tracts and Ottawa Low. The third measure used to test this assumption will compare the percentage differences between the population density, by square kilometre, in the High tracts to Ottawa Low.

The proximity to public housing is one measure used in several studies (Reppetto, 1974; Waller and Okihiro, 1978) as an offender-related variable. Such neighbourhoods are seen to possess those socio-economic characteristics which produce or attract criminals. Indicating the true proximity of public housing projects in relation to the three High tracts might further identify

the actual location of the census tracts themselves. In order to avoid providing such detailed information by measuring the true distance or proximity of the public housing, it is sufficient to note that public housing projects are located in or near the three High tracts, and as well, Ottawa Low. The three measures outlined above will be used to determine if the areas in question possess some of the socio-economic characteristics which produce or attract criminals and not simply the proximity to public housing.

In Table 31, Measure I reveals that there is a greater incidence of low economic families in all of the High tracts compared to Ottawa Low.

Table 31

Measure of Existence of Offender Population in High Tracts Relative to Ottawa Low

	I	II	III
High Tract			
A	+2.6%	-21.3%	+240.6%
B	+20.4	-45.4	+249.7
C	+24.4	-40.0	+ 73.0

While there is only a slightly higher percentage of low income families in High A, both High B and High C have greater than twenty percent more low income families than

Ottawa Low. The figures found in Table 31, Measure II come as no surprise then, if you consider the higher incidences of low income families in the High tracts. The average private household income for High A is 21.3% less than the average income for Ottawa Low private households. The income level for both High B and High C is greater than forty percent below that of private households in Ottawa Low. The average household income for Ottawa Low in the 1981 Census was $25,340.

Overcrowdedness is generally associated with areas of low socio-economic status. The evidence presented by Measures I and II in Table 31 suggests that the High tracts are areas of low status. Examination of Measure III reveals that the population density of the High tracts is, in general, two to three times that of Ottawa Low. Population density would appear to be a factor associated with high break and enter rates, in this trial period.

It was suggested that there is an association between offence rates and those areas which have a higher number of offenders in relation to the population. Using such offender-related variables as proximity to public housing, low income, and population density it has been illustrated that the High tracts possess characteristics which contribute to the formation of an offender population. As a result the high break and enter rates experienced by the High tracts can, in part, be explained

by the presence of factors conducive to crime within the High tracts themselves.

b) Age Composition of Area

The age composition of an area has been associated with the area's break and enter rate. A positive correlation would exist between the percentage of youth in an area and its residential break and enter rate. Studies have indicated that break and enter is a crime of youth, with youths committing a majority of all occurrences (Pope, 1977b; Maguire, 1982). In order to examine this belief the age composition of Ottawa Low and the High tracts were examined. The Canada Census indicates what percentage of the population in a given area is fifteen years of age or under. The differences between the percentage of population 15 years and under in the High tracts and Ottawa Low are displayed in Table 32.

Using this as a measure of the youth population, it would appear that there are fewer youths 15 and under in the High tracts than in Ottawa Low. Both High A and High B have approximately ten percent fewer youths than Ottawa Low, while High C is just slightly lower than Ottawa Low with 2.3% fewer youths aged 15 and under. Using this measure as an indication of the youth population, it would not appear the break and enter is affected by the proportion of youths residing in these areas. However, the use of Canada Census data may be a poor or weak measure of

this premise, since Census data identifies only those youths 15 years of age and under. A different answer to the question of 'Crime of Youth' may have been found if the Census data had included the portion of the youth population aged 12 to 18 years, that portion which makes up the young offender population.

Table 32

Age Composition of High Tracts
Relative to Ottawa Low

High Tract	
A	- 9.8%
B	-10.6
C	- 2.3

Socio-economic factors relating to proximity to offender population and age composition of an area were factors discussed in relation to 'Crime and Opportunity'. Based on the brief examination conducted above it would appear that the high break and enter rates experienced in the three High tracts during the test period could be associated with the nearness to an offender population. The age composition of the High tracts, when compared to

Ottawa Low, is not a factor associated with the high break-in rates.

Crime of Opportunity

Discussion in the literature review chapter of this thesis indicated that a high income level may contribute to the attractiveness of an area as a target, suggesting that burglars would select the more affluent among available targets. Three measures were constructed using Census data to examine this notion of affluence: I) Average Private Household Income, II) Average Value of Household, and III) Percentage of Population in which the Gross Payments > 25% of Household Income. Measure I compares the percentage differences between the average private household income of the High tracts and Ottawa Low. Measure I was used in the 'Crime and Opportunity' discussion in an attempt to determine if a low average income level can contribute to the determination of a criminal population in a high crime area. In this example, Measure I will be used to determine if a high income level may contribute to the attractiveness of the area as a target.

Table 33

Affluence of High Tracts Relative to Ottawa Low

High Tract	I	II	III
A	-21.3%	+15.1%	-4.3%
B	-45.4	+85.9	-3.8
C	-40.1	-20.1	+0.8

Measure II displays the percentage differences between the average dollar value of households in the High tracts and Ottawa Low. In Measure II the term 'household' refers only to homes which are private owner-occupied non-farm dwellings.

The Canadian Census provides figures indicating the percentage of the households in a census tract in which the monthly payments, by a tenant or an owner, is greater than twenty-five percent of the household income. Measure III will compare this percentage for households in the High tracts to this same percentage for households in Ottawa Low. The basic assumption of Measure III is that fewer households in an affluent area would require greater than 25% of their household income for billing than in a less affluent area due to an assumed higher level of relative income.

In Table 33, Measure I reveals that the average private household income in the High tracts is twenty to forty-five percent lower than that of Ottawa Low. Based on

income level alone the high crime areas would not appear to be more affluent than Ottawa Low. On examination of Measures II and III in Table 33 it may appear that the households of High A and High B were more affluent targets than the households of Ottawa Low. The average value of households in High A and High B were higher by 15.1% and 85.9% respectively. In addition, a slightly smaller percentage of households in both High A and High B commit greater than 25% of their household income to monthly payments incurred than in Ottawa Low.

In addition to the lower level of income in High C, the average value of households is also lower than in Ottawa Low by approximately twenty percent. As well, a small percentage of householders in High C spend greater than 25% of their earnings on bills than in Ottawa Low. It would appear that in High C the high break and enter rate could not be attributed to the affluence of the area.

Based on Measures II and III it might be suggested that the households in High A and High B are more 'affluent' than the households in Ottawa Low. Households in High A and High B have a greater dollar value than Ottawa Low households. As well, residents of High A and High B use a smaller portion of their income for monthly payments. Despite these factors the 'affluence/availability' association with the high break and enter rate experienced by the High tracts is

questionable. The average private household income for the High tracts is well below that of Ottawa Low households. There is only a minimal difference between the High tracts and Ottawa Low in regard to Measure II. Although the average value of households in High A and High B are higher than the households of Ottawa Low, this difference is rendered insignificant when one considers that the households referred to in these figures includes only those households which are private owner-occupied non-farm dwellings. In High A, only 18.1% of the dwellings are private owner-occupied. Five percent of the dwellings in High B and 9.6% in High C are owner-occupied. These percentages are low when compared to the fact that 32.4% of the households in Ottawa Low or 38.5% of the households in the Ottawa/Vanier area are private owner-occupied dwellings. The households in High A and High B would appear to be greater in value upon initial examination, however, the figures provided to determine this fact include only a small percentage of the dwellings in the areas.

In the literature review section, it was noted that upper income households within high and middle crime areas appear to be victimized most frequently. That is, in a high crime area with a low average income, households with upper incomes within the low average income group were more frequently victimized. Perhaps this is the case in

High A and High B. The above average value households within this low income area may be victimized more frequently, adding support to the 'affluence' factor. A review of the frequency analysis section for the High tracts reveals that these 'affluent' households are not the primary targets of break and enter suspects. High-rise apartments were the most frequently reported targets in all three High tracts (A:52.3%, B:59.5%, C:32.3%). High-rise apartments would not be included in this measure of affluent homes (ie private owner-occupied dwellings). Single family dwellings are the second most frequently reported targets in both High A (31.8%) and High B (16.2%). Break-ins in High C are fairly evenly distributed over the three main types of structure: Single family dwelling - 29.0%, Low-rise apartments - 29.0%, and High-rise apartments - 32.3% (Table 22: Frequency Analysis of Type of Structure).

The chi-square tests of independence performed in the data analysis section indicated that the reported break and enters were not distributed in proportion to the residential composition of the three High tracts (Table 24 - Chi-Square Analysis of Type of Structure). Despite not being the primary target, a disproportionate percentage of single family dwelling break-ins were reported during the test period, suggesting a weak association between affluence and the high break and enter rate.

Summary

Proximity to an offender population and area affluence are two factors which would appear to be associated with the high break and enter rates experienced in the three High tracts during the test period. All three High tracts have a greater incidence of low income families, lower average income, and a greater population density than Ottawa Low. The presence of these measures implies the presence of an offender population and therefore, a high break and enter rate.

A weak association between area affluence and a high rate was found in this analysis. Although the average household income in the High tracts was below that of Ottawa Low, the average value of private owner-occupied households in High A and High B was above the average value for Ottawa Low households. It was noted that these households make up a low percentage of the dwellings in High A and High B, however, when compared to the residential composition of the High tracts it is discovered that a disproportionate percentage of these households are reportedly being broken into. This finding supports the theory that households with upper incomes within the low average income group are more frequently victimized.

5

RECOMMENDATIONS

The Role of the Police

Before conclusions and recommendations can be made, based on the findings in this thesis, the role of the police in today's society must first be discussed in order to better understand how these recommendations might be implemented. As well, the approaches presently implemented by the Ottawa Police Force will also be discussed.

Traditionally, in North America, a philosophy of police work exists depicting the police as 'crime-fighters'. The primary purpose of policing is the control of criminal activity in society and the general focus of the police is on the apprehension of criminals and the detection of crime. The source of this philosophy dates back to 1829 and the creation of Sir Robert Peel's 'police force' in England. One of Peel's fundamental principles, on which he based his London, England Force, is the belief that the absence of crime will best prove the efficiency of the police (Clift, 1956, p.10).

It has been suggested that initially the police function in North America was primarily seen as a night watchman. The police were to maintain order against the chief threats of the particular time, be they fire, wild animals, or disruptive behaviour. Solving crime was seen as a private matter, not as a police responsibility. Gradually, this view of the police changed from maintaining order to fighting crime (Wilson and Kelling, 1982, p.33).

The role of the police is, in part, formed by the view the public has of the police. Wilson (1975) believes that citizens view the police as organizations concerned with preventing crime and catching criminals. He suggests that if a crime is committed citizens feel the police should diligently look for the criminal, even at the expense of other police services. Wilson notes that a belief exists that the public's main concern is with crime and therefore they believe that no police equates to more crime and that more police will result in less crime.

The Canadian Urban Victimization Survey which was completed in the city of Edmonton indicated that among those who had reported a break and enter to the police, "wanting the offenders arrested" was cited as most important for the victims.

Murphy and Muir (1984) indicate that the public expect more from the police than is suggested in Wilson's writings. An analysis of telephone requests for police service can be seen as an indication of what the public believed the police 'should' do. Based on this analysis the police role includes the ability to recognize and handle persons with emotional disorders, resolve family disputes in a manner that will not damage the family unit, and participate in community relations and education programs. This gives the police a much broader, socially

defined mandate to maintain public order. Law enforcement is only one of a number of police problem-solving services.

Murphy and Muir (1984) accept the fact that the general focus of the police is on the apprehension of criminals and the detection of crime. However, they note that studies indicate that both citizens and the police assign levels of importance which are disproportionate to the frequency with which the police actually perform these tasks. Crime is seen as a threat by both the police and the community as a whole therefore, crime-related activities are considered to be the most important police tasks.

Murphy and Muir (1984) have suggested that the crime-fighting model of policing, as they call it, is a product of the American urban police experience. The crime fighting approach may be more appropriate in areas with high rates of serious criminal activity in the downtown core. This model, which is supported by many with perspectives similar to that of Wilson's, is a product of the American historical and cultural experience. An exclusive emphasis on this model may be inconsistent with a community's needs and priorities.

The Ottawa Police Force and Break and Enter

'Break and enter' and the combating of this crime is, like all aspects of policing, believed to be the responsibility of the entire Ottawa Police Force and not simply the sole responsibility of one division or section. Police officers, particularly those in Ottawa, are viewed as generalists and, although various sections exist within the Force, all officers are involved in the detection, investigation, and prevention of crime in one form or another.

Despite this generalist view, there are three main sections within the Ottawa Police Force which place a greater emphasis on the crime of residential break and enter. The first two, the Uniform Division and Criminal Investigation Division (CID), are both referred to as 'operational' divisions. Officers in the Uniform Division can receive information regarding the past day's break and enters from the Force's in-house computer system. A uniformed officer could determine where and when the occurrences were reported within his/her car area and direct his/her own patrol time based on this information. Infrequently the officer's supervisor may provide some direction as to where and when this 'directed' patrol should take place. High visibility of police cruisers in current 'trouble-spots' is one approach that is used. This approach can have limited effects since the officers are

acting simply on location information and only on those reports of which they are personally aware. Officers who rely solely on their own personal experiences or 'street savvy' limit themselves and as a result further weaken the overall effectiveness of their own directed patrol.

The Criminal Investigation Division (CID) is subdivided into various crime-type sections. Both a residential and commercial break and enter section exist within CID. In general, two CID officers are assigned to areas that correspond to the four Ottawa Police districts. These two officers in effect receive all the residential break and enters that take place within their designated area. They are responsible for investigating and concluding all assigned reports which, if we consider the rate of 1482 occurrences per 100,000 residents in 1986, might be an overwhelming feat. Despite the advantage gained by assigning the two officers to a particular area, and thereby assuming they will be able to identify similar patterns and/or modes of operations of the suspects in their designated area, this is lost by the sheer number of reports which they are assigned.

Records are kept manually by the Break and Enter Section regarding the number of break-ins, the location of the break-ins, and property stolen during these occurrences. As well, the Section maintains a current file of the suspects charged and convicted of break and enter.

Recently, the Section has expanded their manual records into Modus Operandi information such as point of entry, mode of entry and type of structure. The records involve tabulation of these indices for given periods of time.

The rapport between the Uniform Section and the Break and Enter Section is considered to be good. Uniformed officers are encouraged to approach CID officers with concerns, comments, or questions and the response is quite positive. One problem with this informal approach is the inconsistency of both the contacts and the information, since a Uniform officer may have some difficulty in tracking down the CID officer responsible for his/her area due to shift work. Uniform and CID officers do have the chance to exchange information on a more regular basis at the monthly meetings conducted by the Crime Analysis/ Intelligence Section of the Ottawa Police Force. During these meetings, officers from all sections within the Force are given the opportunity to attend and discuss current and historical crime trends or issues.

The third main section within the Ottawa Police Force which places a greater emphasis on residential break and enter is the Crime Prevention Section. The largest program, and perhaps the program which receives the greatest attention, is Neighbourhood Watch. This program is designed to encourage citizens to become actively involved in protecting or guarding his/her residence and

community. The Ottawa Police Force Neighbourhood Watch program, which was initiated in 1981, is an attempt to co-ordinate better police/community relations to reduce crime in the City of Ottawa/Vanier. Crime Prevention officers provide security evaluations of homes in order to improve and upgrade security measures. As well, the officers assist members of the community in a property identification and inventory system called Operation Identification, in order to protect the citizen and his/her own property. It is believed, by the Ottawa Police Force, that programs such as Operation Identification discourage the theft of valuables through easy identification. Operation Identification is available to any member of the community by simply contacting the Crime Prevention Section.

Neighbourhood Watch groups are formed after members of the community organize and outline a specific geographical area through the Crime Prevention Section. Ninety percent of the homes in the defined area must participate in order for this concerted effort to be officially recognized by the Ottawa Police Force. Recently an Apartment Watch program was instituted by the Force for apartment building tenants, however, the emphasis by the Crime Prevention Section is on single family dwellings at the present.

During the years 1983, 1984, and 1985 the City of Ottawa experienced the highest per-capita residential break and enter rate among 16 major Canadian cities and urban regions with populations of 250,000 or more. In July of 1986 The Ottawa Citizen brought this matter to the forefront by publishing figures from the Canadian Centre for Justice Statistics that indicated that Ottawa-Hull was "Canada's break-in capital". (July 12, 1986, p.A1). Although apparently aware of their own situation, since the rates are calculated using each individual police force's figures, the Ottawa Police Force was faced with growing public awareness of the city's dismal rate.

In October of 1986 the Ottawa Police Force formed a special surveillance squad to deal with what The Ottawa Citizen referred to as "one of the city's biggest crime headaches" (April 4, 1987, p.B5). The squad's primary focus in its early stages was solely residential break and enters. This unit's work was directed by the break and enter information available on the Force's in-house computer system and intelligence information generated by themselves and the Uniform and Criminal Investigation Divisions. As well, interest from within the Force on the role of the Crime Prevention Section in combating break and enter was renewed, as a result of this 'sudden' public awareness.

Kelling (1974) noted in his book, The Kansas City Preventive Patrol Experiment, that the police are limited in their ability to either prevent crime or to apprehend criminals once crimes have been committed. He lists the nature of the crime problem itself, the limits society places upon the police, the limited amount of crime prevention resources, and the complexities of the criminal justice system as the reasons for the police's limited ability. Kelling does suggest however, that the staff resources do exist within police forces to deal with these crime problems. The next section of this thesis will make use of one form of resource available to the Ottawa Police Force, that being specific and detailed information on Ottawa/Vanier residential break and enters, in the development of new policies and strategies to combat residential break and enters.

Policy and Operational Recommendations

Policy Recommendation I

> A greater emphasis should be placed by the Ottawa Police Force on the identification and/or establishment of offender and offender population programs.

The Community Analysis section of this thesis suggests that the factor, associated strongest with residential break and enter, is the proximity to offender population. Less emphasis should be placed on 'Crime

Prevention-type' programs and more on offender-oriented programs. Evidence exists that indicates crime prevention programs such as the Operation Identification program run by the Ottawa Police Force or 'target-hardening' tactics utilized by the Uniform Division of the Force simply alter the behaviours or activities of criminals instead of bringing the crime problem to an end. This hypothesis, referred to as crime displacement, suggests that offenders relocate their activities, select different targets, alter their mode of operation, and/or engage in a different form of criminality in order to avoid the preventive measures instituted (Gabor, 1981).

This is not to suggest that the Ottawa Police Force should conclude all of their crime prevention programs. Instead, as clearly stated in Policy Recommendation I, the Ottawa Police Force should begin to identify and/or establish offender and offender-population programs in order to combat residential break and enter. Some opportunity will always exist for thieves. The Ottawa Police Force must try to reduce this opportunity, however limited it may be. The kind or nature of such offender-population programs has not been addressed in this recommendation, simply the need to identify and/or establish such programs.

Policy Recommendation II

> Offender data (ie: age, residence, education, etc.) should be collected and analysed in order to know more about the offender to assist in the institution of Policy Recommendation I.

Crime information and modus operandi information is important, however, the inclusion of offender data would aid further in the policing of break and enter. Such information would be necessary in order to fulfil Policy Recommendation I. The Ottawa Police Force would be able to consider such studies as age composition and offender mobility with the addition of offender data. The Ottawa Police Force currently possesses a computer-aided dispatch and records system thereby possessing the capabilities to collect and collate such data.

Policy Recommendation III

> Re-evaluation of the City of Ottawa and the Regional Municipality's policy regarding low income/offender population housing projects.

This policy recommendation is directed more towards the City of Ottawa and the Regional Municipality of Ottawa-Carleton (RMOC) than the Ottawa Police Force. However, the Ottawa Police Force could be making recommendations to city planners based on the information obtained in this thesis regarding residential break and enter and the proximity to offender populations. Since

this thesis served simply as a trial run and due to the fact that the analysis completed was limited to a three month period, a more in-depth analysis completed over an extended period of time should be conducted.

A widely held belief exists among criminologists that a positive relationship exists between crime rates and population density. Kvalseth (1977) noted that there are few studies which have addressed population density and crime. However, those to date indicate that any relationship between density and crime, if significant at all, is a negative one. Spector (1975), in his study of population density, unemployment and crime, suggests that population density and unemployment are at best minor contributors to the high rate of violent crimes.

Roncek (1975), in a review of density and overcrowding as dependent variables, concluded that evidence exists that suggests density has little or no positive effect on crime rates, while a positive relationship exists between overcrowding and crime. He further states that the evidence to date is non-conclusive and can only be seen as suggestive.

If the crime rates cannot be explained by population density or unemployment per se, how then can the association between residential break and enter and the proximity to offender population be explained? In the book, The Urban Criminal, the authors suggested that

housing departments play an important role in this social process in that 'difficult' tenants with high delinquency rates are found disproportionately in certain housing projects. Baldwin et al. (1976) give two explanations for this disproportionate distribution of 'difficult' tenants. The first is that housing departments consciously and intentionally place certain undesirable tenants together. The departments deliberately concentrate these tenants in order to limit the number of 'difficult' projects. Their second explanation suggests that families with higher standards or aspirations, who find themselves in 'difficult' areas, either move out on their own initiative or apply for a transfer. It is therefore, inevitable that over a period of time there will be some groupings across a city or within housing projects with a disproportionate number of tenants whose behaviour lowers the standard of a neighbourhood or project.

Although three areas were identified as having a 'high' break and enter rate and a relationship was drawn between low-income housing and offender population, this is not to suggest that every individual living within or spatially close to this offender population is conditioned by the offenders' attitudes and behaviours into breaking the law themselves. Instead, what is suggested is that within this defined area a substantial proportion of the people commit offences and there exists a general social

tolerance towards this behaviour. These areas then, are said to be 'delinquency-producing' (Herbert, 1982).

Davidson (1981) discussed how class inequalities can lead to crime, in his book Crime and Environment. He stated, "while there is strong evidence that lower-class people and people from lower-class areas commit more crimes, less is said about the mechanisms of predisposition" (p.149). Davidson noted that public housing, or council estates as they are referred to in England, have been identified as a key element in the patterns of criminal areas. This relationship however, should be placed into the wider context of housing policy and not viewed simply as a factor of offender/crime rates. It could be suggested then that the association between residential break and enter and the proximity to offender population, as identified in this thesis, is a question of housing policy - an important role in the social process. Housing policy plays, as Davidson so correctly describes it, an integral part "in the development of social reaction to crime within communities" (p.151).

As well, it must be noted, that any change in housing policy in an attempt to reduce the relationship between break and enters and proximity to offender population, would not be in itself a panacea. Housing policy changes must be supported by social services, capable of handling the other equally urgent needs of the

individuals (Mannheim, 1948).

Harvey (1973) noted that in general the main supply of low-income housing will be located in central city areas. There is some difficulty expanding the supply of low-income housing in the inner city due to such constraints as availability and zoning regulations. The result of this is poor quality low-income housing which is relatively high priced. Low income families have few options but to locate in the high priced inner city, where employment opportunities are fairly stagnant and in which a small portion of the central business district's employment opportunities are in the unskilled low-income category. Harvey suggested, as did Mannheim (1948), that extra resources should be allocated to these individuals to compensate for their social and/or natural environmental difficulties. These individuals are forced by circumstances such as low income and lack of alternatives to live in a particular area. As a result, their needs will justify the compensation given.

Policy Recommendation IV

> Neignbourhood Watch programs should be designed to include all types of dwellings and not be geared solely to single family residences.

The findings of this thesis indicate that single family dwelling break and enters make up only 36.6% of all

reported residential break-ins during the test period. As well, it was noted that the reported break-ins do not reflect the proportional residential composition of the four police districts nor the Ottawa Area. A large portion of residents, be they victims or non-victims of residential break and enters, are being excluded from the Neighbourhood Watch program. The overall effectiveness of Neighbourhood Watch programs, in battling residential break and enters, may be increased if it included all types of dwellings.

The Ottawa Police Force may not be able to simply transfer the programs designed for single family dwellings to high rise/low rise apartments, or any other type of housing. However, the modus operandi information and cross tabulations by type of structure will assist in comparing and contrasting. In addition, despite the evidence which was discussed earlier which indicates crime prevention programs simply alter the behaviours or activities of criminals, the inclusion of the information provided by the types of analyses completed in this thesis will aid in the overall effectiveness of Neighbourhood Watch by assisting individuals and the police in deterring opportunistic property crime.

Policy Recommendation V

> The reporting format should include information regarding the surveillance level of the points of entry recorded in break and enter reports.

The visibility of the point of entry was a factor associated with residential break and enters which was discussed in the literature review section of this thesis. At the present time, this information is not systematically reported. Information such as distance from the roadway, obscured view of point of entry, proximity to neighbours, and availability of surveillance points may be discussed in the text of the report and is available to the investigating officer however, no comprehensive study could be completed with this limited information.

Several studies (Repetto, 1974; Waller and Okihiro, 1978; Winchester and Jackson, 1982) have noted the value of this additional information on the point of entry. This information will only increase the quality of the modus operandi information and may assist in furthering operational or crime prevention strategies to combat break and enters.

Policy Recommendation VI

> Closer scrutiny of Ottawa Police Force occurrence report forms by front-line supervisors is required to ensure the inclusion of valuable Modus Operandi information.

As revealed in the analyses section of this thesis, 13.2% of all reported point of entries were classified in the 'other' category. 'Other' was used for those reports in which no POE was recorded. Although this category was also used for occurrences in which there was 'no sign of forced entry' and therefore a POE could not be determined, it also included those occurrences in which the reporting officer simply did not indicate at which point of entry the suspect(s) entered the residence. As well, non-specific information categories such as 'door unstated' (9.1%) and 'window unstated' (8.7%) were employed if the reporting officer provided such limited information. In less than ten percent of the reports the mode of entry was categorized as 'other' in those cases in which the reporting officer failed to indicate how the suspect(s) entered the residence.

The 'day of the week' analysis is another example of how valuable information was omitted from the report. The 'other' category constituted approximately twenty-eight percent for DOW. This category was not simply used for those reports in which a specific 'day of the week' could be determined, but also included those reports in which a day of the week was simply not reported.

The omission of such information for the purpose of analyses in such a study as this thesis could be the least of concerns for the Ottawa Police Force. Consider

however, how difficult it must be for a member of the Criminal Investigation Division to properly conduct an investigation if, to begin with, he or she does not know when, where, or how the reported incident took place.

At the present time, a policy is in effect that indicates a report must be 'Approved' by the officer's supervisor before the reports are allowed to enter into the Force's distribution process. Once 'Approved' the report will be returned to the originating officer's supervisor if an error or omission is detected. Given the results discussed above, it would appear that this policy is not strictly adhered. The present policy should be enforced, thereby assisting in the proper and thorough completion of Ottawa Police Force reports.

In addition to closer scrutiny, the need for a new systematic reporting format, to assist in the collection of break and enter data, has been identified. At the present, the occurrence reports are summarized and then coded, causing room for error in interpretation of the occurrence by the researcher. A new format could be designed, identifying and defining the variables for the reporting officer, thereby further reducing the possibility of an erroneous conclusion.

Policy Recommendation VII

> The establishment of this project, as a continued and vital process in the collection and dissemination of information, to assist and direct the Ottawa Police Force in their efforts against residential break and enter.

Through the course of this thesis the use of detailed and specific information on which knowledgable decisions regarding policies and strategies can be made has been maintained. The patterns revealed in each police district and the inferences drawn on factors associated with residential break and enter during this trial period are the basis on which, the previous six policy recommendations and the operational recommendations that will follow, have been made. As noted in the introduction to this section, the resources do exist within police forces to deal with crime problems. The continued development and use of this information, for either current or future historical analyses, is essential to policing as it exists today.

Operational Recommendation I

> Begin the dissemination of the Frequency and Chi-Square Analysis information on a regular basis to the various sections of the Ottawa Police Force.

The findings indicate that during the test period the reported occurrences were not evenly distributed across

all the days of the week. As well, break and enter appeared to be a daytime phenomenon overall in the Ottawa area. Although some researchers and police officers might suggest that these findings are only confirming the obvious, with regards to 'day of the week' and 'time of day', this may not always be the case. Uniformed officers should be continuously made aware of when and where the breaks and enters have reportedly taken place in the City and within their own police district/patrol zone. This information should be disseminated to Uniform officers in order to allow them as individuals to establish a more complete picture of break-ins in their own individual areas and the City as a whole. Both current and historical analyses should be completed in order to allow the officers and their supervisors to make informed decisions at the patrol level.

The information regarding day of the week and time of day will also be of use to the surveillance squad involved in monitoring break and enters. The squad could adjust their work schedules to match those periods of time in which break and enter are reportedly occurring most frequently. Concentrating solely on a specific area of the city will make the squad less effective if they are not present during the times at which the break-ins are reportedly taking place.

Information regarding day and time should also be incorporated into existing crime prevention programs. The inclusion of this information in prevention literature made available by the Ottawa Police Force is necessary in order to assist the community in obtaining a true view of break and enter. One current duty of the Neighbourhood Watch police liaison officer is to provide 'statistical information' where appropriate to assist in evaluating the program (City of Ottawa, 1987). This duty should be extended to include current and crime-specific information at the time occurrences are reported in the area and not six to twelve months after the fact for the purpose of annual or semi-annual reports. Like the police, the community should receive current information, where appropriate, to assist in combating break and enters.

During this test period residential break-ins were not distributed in proportion to the residential composition of the Ottawa Area (single family dwelling: 36.6% of reported break-ins, high-rise apartments: 33.6%, low-rise apartments: 19.1%). The findings indicate 'front door' is the most frequently reported point of entry in the Ottawa Area and the four police districts. 'Rear door' is the second most common point of entry reported in the Ottawa Area. Suspects in the reported break-ins are using crude methods of gaining entry to the dwellings, for the

majority of occurrences. 'Forced/pried' method of entry is reported most frequently, followed by 'Smashed/kicked'.

Given these findings, random patrol by Uniform officers or random surveillance by the surveillance squad will not be effective. How effective can these strategies be if over thirty percent of all reported break-ins are taking place in high-rise apartment buildings? What can a uniformed officer observe from his/her patrol car if in 12.6% of the reported incidents the suspects are gaining access to the dwellings via the rear doors? The Kansas City preventive patrol experiment conducted by Kelling (1974) indicated that changes in the amount of random preventive patrol in marked police cruisers does not in itself seem to affect how much crime occurs or how safe citizens feel. If random patrol does not appear to be the answer to crime reduction, then perhaps alternative measures should be considered.

One alternative strategy would be the introduction of beat or foot patrol officers into the areas of Ottawa designated as in need of assistance. Areas such as the census tracts identified in this thesis could be policed by foot patrol officers. Wilson (1975) indicated in his summary of preventive patrol programs that increased police presence on foot in densely populated areas will likely lead to decreased street crimes. He noted that it is

unknown how long this reduction will last or how much crime is merely displaced to another location.

It would be inappropriate though, to disregard the potential benefits of foot patrol if success of such a program was based solely on the presence or absence of reported crime. Although the introduction of foot patrol officers into 'high' break and enter areas is being presented as a solution, the reader must be aware of the difficulties present in drawing a correlation between foot patrols and the presence of or absence of crime. Many factors, in addition to the presence of foot patrols, are involved in making such a statement (Murphy and Muir, 1984).

Recent studies have indicated that foot patrol programs have a positive effect on police-community relations. Such programs strengthen the working relationship between the police and the community. The introduction of foot patrols into designated areas would be done while not compromising the traditional patrol methods (Murphy and Muir, 1984). Foot patrols are suggested as an alternative, but only to aid in the ever changing role of the patrol officer.

The surveillance squad may consider similar changes, such as foot surveillance or surveillance by officers on bicycles, to meet the problem within an area. The type of structure, point of entry, and mode of entry

involved will affect the type of surveillance that is required.

'Doors' make up over sixty percent of the reported points of entry in the Ottawa Area. In approximately twenty-six percent of the break and enters a 'window' was reported to have been the point of entry. At the present time, the Crime Prevention Section provides security evaluations of residences and an emphasis is placed on doors/locks and windows. This Section should consider an analysis of victim versus non-victim home security in order to assist them in determining if a) the information they are providing is correct or up to date or b) the information is having any effect on deterring or preventing crime.

Operational Recommendation II

> Use of Modus Operandi information by Criminal Investigation Division personnel to identify patterns of break and enter and in turn, identify possible suspects.

During the test period, 'key or pick' and 'no sign of forced entry' in high-rise apartment buildings constituted 17.1% of the total number of break-ins reported in Ottawa West. Based on this apparent pattern, the investigating officer could identify any known 'key or pick' experts in order to direct his/her investigation of

these occurrences. At the present time, this pattern may not be identified and the investigating officer(s) may independently take different approaches in investigating these occurrences. As noted in the introduction to this section, the sheer number of reports assigned to be investigated by an officer does not allow for the time, nor perhaps the mental capability, to identify such patterns. The tabulation of modus operandi information for the investigating officer will assist in the execution of his/her duties.

The modus operandi information could also be utilized in those situations in which a suspect has been arrested and charged with a break and enter in which a particular, or perhaps unique, mode of operation was used. A search of the computer files, created for this thesis and maintained beyond the initial three month trial period, using the particular mode of operation in question might reveal other similar occurrences of which this suspect may have committed. The query capabilities exist at the present time, however, assistance would be required from the Force's Computer Services Section in order to bring them 'on-line'. At the present time, if a suspect admits to committing other similar break and enters the investigating officer must search for these occurrences based on the approximate location and date given to him/her by the suspect. This process is both time consuming and

frustrating for the officer but must be completed in order to finalize each and every individual occurrence the suspect has admittedly committed.

SUMMARY AND CONCLUSION

The main objective of this thesis was to provide specific knowledge of residential break and enters in Ottawa and Vanier from which various policies and strategies could be developed by the Ottawa Police Force to combat this crime. This thesis acted as a test pilot project in order to bring to the attention of management level officers within the Force the availability and potential of such information. It was hoped that this thesis would stimulate a more informed discussion about the possibilities of preventing or reducing residential break and enter through such analyses. It is the contention of the researcher that more knowledge of and understanding of the distribution, frequency, and factors associated with residential break and enters is essential to the development of policies and strategies in policing today.

Between February 1, 1987 and April 30, 1987 950 residential break and enters were reported to have taken place in the Ottawa/Vanier area. Each of these was summarized by the researcher, collecting the following information:

- file number
- date of occurrence
- day of week
- time of day

- location
- type of structure
- point of entry
- mode of entry

Each summary was then coded, using a system designed by the researcher, and entered into the Ottawa Police Force's computer system. In addition, each occurrence was plotted on a map of the cities of Ottawa and Vanier, using the street address and a city directory in order to precisely record its location. The four Ottawa Police districts and the Canadian census tracts were outlined on this map in order to determine into which police district and census tract each occurrence fell. The police district and census tract for each occurrence was recorded and entered into the Force's computer break and enter file, along with the other previously mentioned indices.

The coded summaries for the 950 residential break and enters were then manipulated using a statistical software package created by the Ottawa Police Force Computer Services Section. Frequency distribution tabulations were completed, for the four police districts and the Ottawa Area, for the following categories of information: day of week, portion of week, time of day, type of structure, point of entry, and mode of entry. Descriptive analyses were then completed for the frequency

distributions, making summarizing statements for the common elements.

During the test period break and enters took place most frequently on Monday's and Friday's in the Ottawa Area. A decline in the number of reported break-ins was noted from Monday to Wednesday, with an incline on Thursday and again on Friday. Saturday and Sunday were the least frequently selected days of the week in reported residential break and enters in the Ottawa Area.

Chi-square tests of independence were performed to determine whether or not a significant difference existed between the observed number of occurrences, for which the day of the week was known, and the expected number of occurrences in these categories. The null hypothesis in this test suggested that the occurrences would be equally distributed across the days of the week. The null hypothesis was rejected for the Ottawa Area (c.v. = 12.592 = .05), suggesting then that the pattern revealed for 'day of week' was significant at that level.

The variable 'portion of the week' was introduced in an attempt to determine if break and enter was a weekday or a weekend phenomenon. In some occurrences it was not possible for the victim and/or the police to determine the particular day on which the offence took place. However, it may be possible to determine if the occurrence took place during the week or on the weekend. The victim may

have left her home on Tuesday at 1800 hours and returned on Thursday at 1600 hours to discover her residence broken into. It is not possible to determine on which day this break-in occurred, but it is possible to state that this occurrence was a weekday event.

For the purpose of this thesis, weekday was defined as 00:00 Monday to 17:59 Friday, while weekend was 18:00 Friday to 23:59 Sunday. Chi-square tests of independence were performed on the portion of the week data, with the null hypothesis suggesting that residential break and enters would be proportionately distributed over the weekdays and weekend. The null hypothesis was accepted (c.v. = 3.841, = .05) indicating break and enter occurrences are proportionately distributed across the entire week. Although there were particular weekdays on which break-ins occur more frequently in the Ottawa Area, break and enter was neither a weekday nor a weekend phenomenon during the test period.

The frequency analysis of the time of day data revealed that break and enter was a daytime phenomenon. Break and enters occurred most frequently during the daytime. There were greater than fifteen percent fewer break-ins reported to have occurred during the evening than during the daytime. Less than ten percent of reported break-ins took place overnight.

Chi-square tests of independence were performed, on those occurrences for which a time of day could be identified, to determine if a significant difference existed between the observed and the expected number of occurrences. The three time categories designed by the researcher were of different lengths, therefore, the null hypothesis suggested that the occurrences would be distributed in direct proportion to the duration of each of the three categories. The break and enter occurrences were found not to be distributed in direct proportion to the duration of each category (c.v. = 5.991 = .05). Therefore, we may accept the notion that in general, break and enter was a daytime phenomenon during the test period.

Cross tabulations were performed for the variables time of day versus day of week for the Ottawa Area. the results of this cross tabulation revealed that break and enter was a weekday/daytime and weekend/evening event. The cross tabulations for the variables time of day versus portion of week also found this to be the case. The results suggested that break and enter appeared to be a weekday/daytime, weekend/evening phenomenon in the Ottawa Area.

A review of the type of structure data revealed that single family dwellings (36.6%) appear to be the most frequently selected target for break and enters in the Ottawa Area. Single family dwellings are followed by

high-rise apartments (33.6%) and low-rise apartments (19.1%). Chi-square tests were performed to determine if the reported break and enters were distributed in proportion to the residential composition of the Ottawa Area, based on information obtained from the 1981 Canadian Census. As a result of the chi-square value obtained the null hypothesis was rejected (c.v. = 7.815 = .05). During the test period the distribution of break and enters was not in proportion to the residential composition of the Ottawa Area.

Front doors have been the point of entry in almost thirty percent of the reported break-ins in the Ottawa Area during the test period. Rear doors (12.6%) were the second most common point of entry in the Ottawa Area. 'Doors' constitute over sixty percent of the reported points of entry in the Ottawa Area. In approximately twenty-six percent of the break and enters a 'window' was reported to have been the point of entry.

Chi-square tests of independence were completed for the point of entry data to determine if some points of entry are more significant than others. The null hypothesis suggested that there is an equal number of observations for each of the established points of entry. This null hypothesis was rejected (c.v. = 15.507 = .05), asserting then that some points of entry are more significant than others.

A second chi-square test determined if windows and doors were selected an equal percentage of times. This hypothesis was also rejected (c.v. = 3.841 = .05) indicating there are significantly more 'door' points of entry than 'window' points of entry.

The data in the point of entry versus type of structure cross tabulation revealed that rear doors are the most common point of entry in single family dwellings in the Ottawa Area. Rear door (21.0%) is followed closely by front door (18.1%) as the two most common points of entry for single family dwellings. In over thirty percent of the low-rise break-ins, the front door was reported as the point of entry in the Ottawa Area. Rear door entries constituted 14.9% of the low-rise break and enters. Front doors were the main points of entry in high-rise apartments in slightly more than forty percent of the reported occurrences. Front door/apartment break and enters constituted approximately twenty percent of all reported break and enters in the Ottawa Area during the test period.

Forced or pried was the mode of entry reported in over thirty-five percent of the reported break and enters in the Ottawa Area. There were almost twice as many 'forced and pried' entries (35.9%) than the second most common mode of entry, 'smashed or kicked' (18.4%). Chi-square tests were performed on the data to determine if each mode of entry was selected an equal number of times.

The null hypothesis stated that the data would be evenly distributed over the modes of entry. This was not found to be the case as the null hypothesis was rejected (c.v. = 12.592 = .05).

The cross tabulation of mode of entry versus point of entry revealed few surprising patterns. In general, 'forced or pried' and 'smashed or kicked' were the two most common modes of entry for all point of entry. Both doors and windows are twice as likely to be 'forced or pried' than 'smashed or kicked' in the Ottawa Area.

Identifying patterns or trends in the break and enter data was one objective of this thesis. A second involved determining if there were any 'problem' areas in Ottawa and if so what factors could be associated with this problem. Problem areas, or 'High' Census tracts as they were labelled by the researcher, were defined as those census tracts with a break and enter rate twice the estimated annual rate for the City of Ottawa. The annual rate of 1482 occurrences/100,000 people was calculated based on the actual number of reported break-ins in 1986 (4500) and the enumerated population of Ottawa as of January 1986 (303,617).

At the end of the test period, three census tracts were identified as having a 'high' break and enter rate. These 'high' census tracts (High A, High B, and High C)

were then compared with a 'low' area, considering some of the demographic factors which have been shown to be associated with residential break and enter. For the purpose of this comparison, a low rate referred to those census tracts with a break and enter rate one-half or less than the annual rate for the City of Ottawa. The low rate area chosen had a break and enter rate of 0.48 times that of the City of Ottawa rate, with an estimated rate of 712 occurrences per 100,000 over the entire year. This area was called Ottawa Low.

It was suggested that there is an association between offence rates and those areas which have a higher number of offenders in relation to the population. Using such offender-related variables as proximity to public housing, low income, and population density it was illustrated that the High areas possess characteristics which contribute to the formation of an offender population. As a result, the high break and enter rates experienced by High A, B, and C can, in part, be explained by the presence of factors conducive to crime within the areas themselves.

A weak association between area affluence and a high rate was found in this analysis. Although the average household income in High A, B, and C was below that of Ottawa Low, the average value of private owner-occupied households in High A and High B was above the average value

for Ottawa Low households. Private-owner occupied households make up a low percentage of the dwellings in High A and High B, however, when compared to the residential composition of these two areas, it is discovered that a disproportionate percentage of the private-owner occupied households were reportedly being broken into. This finding supports the theory that households with upper incomes within the low average income group are more frequently victimized.

As a result of this analysis, the second objective of this thesis was completed, identifying proximity to an offender population and affluence of the area as factors associated with the break and enter rates of this test period.

After completing the two previous objectives of this thesis, the third and final objective could be addressed, that being recommendations for changes to and introduction of strategies for combating residential break and enter. Policy Recommendations I and II focused on the offender and offender population. The Community Analysis section of this thesis suggested that the factor, associated strongest with residential break and enter, is the proximity to offender population. Evidence exists that indicates crime prevention programs such as the Operation Identification program run by the Ottawa Police Force or

target-hardening tactics employed by the Uniform Division simply alter the behaviours or activities of criminals instead of bringing the crime problem to an end. Policy Recommendations I suggests that the Ottawa Police Force should attempt to identify and/or establish offender and offender-population programs to combat break and enter. To assist in the realization of Policy Recommendation I, Policy Recommendation II promotes the collection and analyses of offender data.

Policy Recommendation III also dealt with the issue of proximity to offender population and increased break and enter rates. Instead of being intended for the Ottawa Police Force, this recommendation was directed more towards the City of Ottawa and the Regional Municipality of Ottawa Carleton (RMOC) and their policies regarding low income/offender population housing projects. Although there is some evidence indicating that a positive relationship does not exist between crime rates and such factors as population density and unemployment (Kvalseth, 1977; Spector, 1975), other studies suggest that housing policies for low-income individuals do play an important role in the socialization process of these individuals (Harvey, 1973; Baldwin et al., 1976; Davidson, 1981). Housing in and of itself is an important factor in this process, but must be viewed in a wider context. Providing low-income housing is not an answer for low-income people

if the other needs of these individuals are not supported by additional social services. The resources must be in place to handle the social and environmental needs of these individuals. Low income/offender population housing has been identified as a factor associated with residential break and enter in this thesis. The policies of the City of Ottawa and the RMOC should be re-evaluated to ensure that the low income/break and enter relationship is minimized.

Policy Recommendation IV suggested that the Ottawa Police Force's existing Neighbourhood Watch program should be extended to include all types of dwellings and not be oriented only towards single family dwellings. Less than forty percent of the reported break and enters took place in single family dwellings. A large portion of residents, be they victims or non-victims of residential break and enters, are being excluded from the Neighbourhood Watch program. Extension of the program, to include all types of dwellings, may increase its overall effectiveness in battling break and enters.

The introduction of Policy Recommendations V and VI would only enhance the information already provided by this thesis. Policy Recommendation V calls for the inclusion of information regarding the surveillance level of the points of entry in break and enter reports. Policy Recommendation VI suggest the occurrence report form should

be more closely scrutinized by front-line supervisors to ensure the inclusion of valuable Modus Operandi information. Both recommendations are aimed at obtaining more information in order to assist in furthering strategies to combat break and enter.

If the thesis' objectives of identifying trends or patterns, determining if any 'problem' areas exist, and outlining recommendations to combat break and enter have been competently completed, then the seventh and final policy recommendation would logically follow. Policy Recommendation VII urges the establishment and continued use by the Ottawa Police Force of the break and enter analyses performed in this thesis to assist and direct in the formation of strategies and policies to combat break and enter. Operational Recommendations I and II then, will act as an extension of Policy Recommendation VII, recommending the use of the frequency and chi-square analysis and modus operandi information by the various sections of the Ottawa Police Force in their attempts to reduce and deter residential break and enter.

Future Studies

During this short, three month trial period the potential for the types of information available in this analysis was identified. As noted above, Policy Recommendation VII calls for the establishment of this

project on a continued basis and it is only after an extended period of time that another potential for this project will be identified - historical analysis. In the future, researchers with the Ottawa Police Force will be able to place current crime patterns into a historical perspective. They will be able to determine if modern break and enter patterns display distinct contrasts to past patterns, or if they are simply continuations of patterns or trends set months, years, or decades before. The availability to compare and contrast current trends will, in some respects, allow policy makers to outline strategies with a greater degree of confidence and competence.

Policy Recommendation II is a second recommendation that outlined the need for continued research, through the collection of offender data. Should this recommendation be realized, the potential would exist to combine offender data and modus operandi information for a comprehensive study of residential break and enter by the Ottawa Police Force. The inclusion of offender data will allow for the study of break and enter as a physical setting (modus operandi) and as an instrument of criminal behaviour (offender data).

In the future, the value of Frequency and Chi-Square Analysis information will be further enhanced by the inclusion of offender data, should Policy

Recommendation II be implemented. The where, when, and how of the modus operandi information will be heightened with the inclusion of 'who', aiding those developing and implementing operational strategies.

A 'victim versus non-victim' analysis was suggested in Policy Recommendation VII for the Crime Prevention Section of the Ottawa Police Force. Should this Section of the Force make use of the modus operandi information to assist in the enhancement of their programs, such an analysis would be necessary in order to ensure that the Crime Prevention Section is providing appropriate information for the prevention of this crime. The analysis of victims' and non-victims' homes might reveal that no differences exist between the two groups in terms of home security or surveillance level, therefore the emphasis placed by Crime Prevention on these items would change.

Limitations

In the literature review section of this thesis, two concerns for the use of **police-recorded data** were noted. The first concern dealt with the problem associated with comparing the crime rates from one jurisdiction to the next, thereby limiting the opportunity for comparisons of various ecological studies. Police recording practices was recognized as a second limitation of police-recorded data. This concern dealt with the sometime conflicting manners in

which police forces would classify or reclassify incidents. The discretionary methods employed by the police can have an effect on reported crime rates.

Although these particular concerns do not apply to the police-recorded data used in this thesis, since no comparison is made to another police jurisdiction, there are several limitations that must be discussed. One such limitation is the accepted fact that police-recorded rates do not reflect the true crime rates. Victimization surveys have verified that this is the case in both Canada and the United States. This limitation has been assumed by the researcher and therefore, any generalizations or recommendations made in this thesis are presumedly based on the analyses of all 'reported' residential break and enters.

The reliability of police-recorded data has also been questioned due to recording practices. Two recording officers might record the same occurrence differently (Brantingham and Brantingham, 1984). Although there was only one recording officer in this analyses, that being the researcher, there was room for error since the researcher was required to code a second individual's description or interpretation of what took place at the scene of the occurrence. The originating officers were required to complete detailed occurrence reports, however, as was noted in the recommendation section of this thesis, some of the

required information was frequently ommitted from the report or was not complete. The method in which the reports were coded did remain consistent throughout the test period, however, the reporting of the occurrences involved hundreds of reporting officers.. Future studies will have to address this concern of reporting and recording consistency.

The analyses for this thesis relied mainly on descriptive summaries of the Frequency tabulations and Chi-Square tests of independence from which inferences were made on factors associated with residential break and enters. These descriptive analyses were the basis for the recommendations and conclusions that followed. As was noted earlier, the main objective of this thesis was to provide specific knowledge of residential break and enter for the Ottawa Police Force. This thesis acted as a pilot project, bringing to the attention of management levels within the Forced the availability and potential of analyses displayed herein. Sophisticated statistical techniques such as a multi-variate analysis were not used, since the objective of this thesis was to stimulate a more informed discussion of preventing or reducing residential break and enter through easily comprehendable or interpretable data. The use of more sophisticated statistical techniques would only complicate the

information process and as a result, the available information may not be utilized. If the limitations of the statistical techniques employed are accepted, so too must the limitations of the conclusions or generalizations drawn. The conclusions were made as a result of interpretations of the data. Factors were stated to be 'associated' to break and enter and there was no suggestion of the existence of a 'correlation'. The strength of these associations or the basis for the recommendations was clearly stated. The conclusions made were limited by the strength of the statistical techniques used.

As well, the researcher must be cautious that no false or spurious explanations of crime are made using the aggregate data. It has been widely recognized that patterns of association, between crime and its potential causes, observed at an aggregate level of analysis may not represent associations observed for individuals. Two types of fallacies may be experienced in ecological analyses such as this thesis. Inferences that relationships which apply to larger areas may also apply to smaller units have been referred to as 'fallacies of disaggregation. Inferences that have been projected from smaller units to larger units have been called 'fallacies of aggregation'. (Harries, 1980). The association made in this thesis between low-income housing/offender population and residential break and enter rates does not suggest that all individuals

within the census tract are criminals. Nor does it suggest that all low-income housing developments in the City of Ottawa/Vanier are havens for criminals. The inferences drawn are limited by the size of the unit of analysis.

The **area/units of analyses** employed in this thesis included census tracts, police districts, and the boundaries of the cities of Ottawa and Vanier. Census tracts were chosen due to availability of demographic information for these areas through the 1981 Canadian Census. A problem arises in that the population of a census tract can change over time, thereby affecting the reported break and enter rate. As well, the original homogeneity of the tract may have been lost, making census tract data or comparisons meaningless. The 1981 Canadian Census results were the most current demographic figures available at the time of this analysis therefore this limitation had to be accepted in order to complete the Community Analysis section of the thesis.

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APPENDIX A

BREAK AND ENTER IN OTTAWA AREA
TIME OF DAY VERSUS DAY OF THE WEEK
FROM FEB-01-1987 TO APR-30-1987

	07:00 TO 17:59	19:00 TO 23:59	24:00 TO 06:59	OTHER	TOTALS
MONDAY	70	32	9	15	120
	58.3	26.7	7.5	12.5	
	21.8	18.6	4.3	3.9	
	7.4	3.4	0.9	1.6	12.8
TUESDAY	69	16	4	20	109
	63.3	14.7	3.7	18.3	
	21.5	9.3	1.8	5.2	
	7.3	1.7	0.4	2.1	11.5
WEDNESDAY	50	17	9	14	90
	55.6	18.9	10.0	15.6	
	15.6	9.9	13.0	3.6	
	5.3	1.8	0.9	1.5	9.5
THURSDAY	56	21	11	10	98
	51.0	21.4	11.2	10.3	
	15.6	12.2	15.9	4.1	
	5.9	2.2	1.2	1.7	10.3
FRIDAY	56	30	13	20	119
	47.1	25.2	10.9	16.8	
	17.4	17.4	18.8	5.2	
	5.9	3.2	1.4	2.1	12.5
SATURDAY	15	31	11	21	78
	19.2	39.7	14.1	26.9	
	4.7	18.0	15.9	5.4	
	1.6	3.3	1.2	2.2	8.2
SUNDAY	11	25	16	19	71
	15.5	35.2	22.4	26.9	
	3.4	14.5	26.1	4.4	
	1.2	2.6	1.7	1.8	7.5
OTHER	0	0	0	265	265
	0.0	0.0	0.0	100.0	
	0.0	0.0	0.0	68.3	
	0.0	0.0	0.0	27.9	27.9
TOTALS	328	172	73	388	950
	33.8	18.1	7.3	40.8	100.0

degrees of freedom = 12
$\alpha = .05$
Critical value = 21.026

$\chi^2 = 190.97$

BREAK AND ENTER IN OTTAWA CENTER
TIME OF DAY VERSUS DAY OF THE WEEK
FROM FEB 01, 1987 TO APR 30, 1987

	NUMBER ROW % COLUMN % TOTAL %	07:00 TO 17:59	18:00 TO 23:59	24:00 TO 05:59	OTHER	TOTALS
MONDAY		13	6	1	9	29
		56.5	26.1	4.3	13.0	
		23.6	14.3	3.3	3.3	
		6.5	3.0	0.5	1.5	11.6
TUESDAY		13	3	3	9	28
		46.1	10.7	10.7	32.1	
		23.6	7.1	25.0	10.9	
		6.5	1.5	1.5	4.5	14.1
WEDNESDAY		14	5	0	1	20
		70.0	25.0	0.0	5.0	
		25.5	11.9	0.0	1.1	
		7.0	2.5	0.0	0.5	10.1
THURSDAY		7	3	1	5	16
		43.8	18.8	6.3	31.3	
		12.7	7.1	8.3	5.6	
		3.5	1.5	0.5	2.5	8.0
FRIDAY		3	12	2	6	23
		13.0	52.2	8.7	26.1	
		5.5	28.6	16.7	6.7	
		1.5	6.0	1.0	3.0	11.6
SATURDAY		4	7	1	5	17
		23.5	41.2	5.9	29.4	
		7.3	16.7	8.3	5.6	
		2.0	3.5	0.5	2.5	8.5
SUNDAY		1	6	4	1	12
		8.3	50.0	33.3	8.3	
		1.8	14.3	33.3	1.1	
		0.5	3.0	2.0	0.5	6.0
OTHER		0	0	0	60	60
		0.0	0.0	0.0	100.0	
		0.0	0.0	0.0	66.7	
		0.0	0.0	0.0	30.2	30.2
TOTALS		55	42	12	90	199
		27.6	21.1	6.0	45.2	100.0

$df = 12 \quad \alpha = .05$
critical value = 21.026

$\chi^2 = 62.51$

BREAK AND ENTER IN OTTAWA WEST
TIME OF DAY VERSUS DAY OF THE WEEK
FROM FEB-01-1987 TO APR 30, 1987

70

NUMBER ROW % COLUMN % TOTAL %	07:00 TO 17:59	18:00 TO 23:59	24:00 TO 06:59	OTHER	TOTALS
MONDAY	19 54.3 19.2 6.9	12 34.3 32.4 4.4	0 0.0 0.0 0.0	4 11.4 3.4 1.5	35 12.8
TUESDAY	18 75.0 18.2 6.6	1 4.2 2.7 0.4	0 0.0 0.0 0.0	5 20.8 4.3 1.8	24 8.8
WEDNESDAY	18 56.3 18.2 6.6	2 6.3 5.4 0.7	5 15.6 23.8 1.8	7 21.9 6.0 2.6	32 11.7
THURSDAY	13 59.1 13.1 4.7	4 18.2 10.8 1.5	2 9.1 9.5 0.7	3 13.6 2.6 1.1	22 8.0
FRIDAY	23 57.5 23.2 8.4	4 10.0 10.8 1.5	6 15.0 28.6 2.2	7 17.5 6.0 2.6	40 14.6
SATURDAY	4 19.0 4.0 1.5	8 38.1 21.6 2.9	3 14.3 14.3 1.1	6 28.6 5.1 2.2	21 7.7
SUNDAY	4 16.7 4.0 1.5	6 25.0 16.2 2.2	5 20.8 23.8 1.8	9 37.5 7.7 3.3	24 8.8
OTHER	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	76 100.0 65.0 27.7	76 27.7
TOTALS	99 36.1	37 13.5	21 7.7	117 42.7	274 100.0

$df = 12 \quad \alpha = .05$

critical value = 21.026

$\chi^2 = 77.40$

BREAK AND ENTER IN OTTAWA EAST
TIME OF DAY VERSUS DAY OF THE WEEK
FROM FEB-01-1987 TO APR 30, 1987

	NUMBER ROW % COLUMN % TOTAL %	07:00 TO 17:59	18:00 TO 23:59	24:00 TO 06:59	OTHER	TOTALS
MONDAY		27	10	1	5	43
		62.8	23.3	2.3	11.6	
		20.6	15.9	3.7	4.4	
		8.1	3.0	0.3	1.5	12.9
TUESDAY		30	7	1	2	40
		75.0	17.5	2.5	5.0	
		22.9	11.1	3.7	1.8	
		9.0	2.1	0.3	0.6	12.0
WEDNESDAY		13	3	4	2	22
		59.1	13.6	18.2	9.1	
		9.9	4.8	14.8	1.8	
		3.9	0.9	1.2	0.6	6.6
THURSDAY		26	9	7	5	47
		55.3	19.1	14.9	10.6	
		19.8	14.3	25.9	4.4	
		7.8	2.7	2.1	1.5	14.1
FRIDAY		25	12	5	6	48
		52.1	25.0	10.4	12.5	
		19.1	19.0	18.5	5.3	
		7.5	3.6	1.5	1.8	14.4
SATURDAY		6	12	4	5	27
		22.2	44.4	14.8	18.5	
		4.6	19.0	14.8	4.4	
		1.8	3.6	1.2	1.5	8.1
SUNDAY		4	10	5	5	24
		16.7	41.7	20.8	20.8	
		3.1	15.9	18.5	4.4	
		1.2	3.0	1.5	1.5	7.2
OTHER		0	0	0	83	83
		0.0	0.0	0.0	100.0	
		0.0	0.0	0.0	73.5	
		0.0	0.0	0.0	24.9	24.9
TOTALS		131	63	27	113	334
		39.2	18.9	8.1	33.8	100.0

$df = 12 \quad \alpha = .05$

critical value = 21.026

$\chi^2 = 90.66$

BREAK AND ENTER IN OTTAWA SOUTH
TIME OF DAY VERSUS DAY OF THE WEEK
FROM FEB 01, 1987 TO APR 30, 1987

NUMBER ROW % COLUMN % TOTAL %	07:00 TO 17:59	18:00 TO 23:59	24:00 TO 06:59	OTHER	TOTALS
MONDAY	11 57.9 30.6 7.7	4 21.1 13.3 2.8	1 5.3 11.1 0.7	3 15.8 4.4 2.1	19 13.3
TUESDAY	8 47.1 22.2 5.6	5 29.4 16.7 3.5	0 0.0 0.0 0.0	4 23.5 5.9 2.8	17 11.9
WEDNESDAY	5 31.3 13.9 3.5	7 43.8 23.3 4.9	0 0.0 0.0 0.0	4 25.0 5.9 2.8	16 11.2
THURSDAY	4 30.8 11.1 2.8	5 38.5 16.7 3.5	1 7.7 11.1 0.7	3 23.1 4.4 2.1	13 9.1
FRIDAY	5 62.5 13.9 3.5	2 25.0 6.7 1.4	0 0.0 0.0 0.0	1 12.5 1.5 0.7	8 5.6
SATURDAY	1 7.7 2.8 0.7	4 30.8 13.3 2.8	3 23.1 33.3 2.1	5 38.5 7.4 3.5	13 9.1
SUNDAY	2 18.2 5.6 1.4	3 27.3 10.0 2.1	4 36.4 44.4 2.8	2 18.2 2.9 1.4	11 7.7
OTHER	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	46 100.0 67.6 32.2	46 32.2
TOTALS	36 25.2	30 21.0	9 6.3	68 47.6	143 100.0

$df = 12 \quad \alpha = .05$
critical value = 21.026

$\chi^2 = 39.49$

PENDIX B

BREAK AND ENTER IN OTTAWA AREA
TIME OF DAY VERSUS PORTION OF THE WEEK
FROM FEB 01, 1987 TO APR 30, 1987

NUMBER ROW % COLUMN % TOTAL %	07:00 TO 17:59	18:00 TO 23:59	24:00 TO 06:59	OTHER	TOTALS
WEEKDAY	295	98	49	143	566
	52.1	15.5	7.1	25.3	
	91.9	51.2	58.0	36.9	
	31.1	9.3	4.2	15.1	59.6
WEEKEND	26	94	29	104	243
	10.7	34.6	11.7	42.8	
	8.1	48.5	42.0	26.8	
	2.7	8.8	3.1	10.7	25.6
OTHER	0	0	0	141	141
	0.0	0.0	0.0	100.0	
	0.0	0.0	0.0	36.3	
	0.0	0.0	0.0	14.8	14.8
TOTALS	321	172	69	388	950
	33.8	18.1	7.3	40.8	100.0

WEEKDAY IS FROM 00:00 MONDAY TO 17:59 FRIDAY
WEEKEND IS FROM 18:00 FRIDAY TO 23:59 SUNDAY

degrees of freedom = 2
$\alpha = .05$
Critical value = 5.991

$\chi^2 = 158.13$

BREAK AND ENTER IN OTTAWA CENTER
TIME OF DAY VERSUS PORTION OF THE WEEK
FROM FEB 01, 1987 TO APR 30, 1987

		07:00 TO 17:59	18:00 TO 23:59	21:00 TO 06:59	OTHER	TOTALS
WEEKDAY	NUMBER	50	19	7	35	111
	ROW %	45.0	17.1	6.3	31.5	
	COLUMN %	90.9	45.2	58.3	38.9	
	TOTAL %	25.1	9.5	3.5	17.6	55.8
WEEKEND	NUMBER	5	23	5	18	51
	ROW %	9.8	45.1	9.8	35.3	
	COLUMN %	9.1	54.8	41.7	20.0	
	TOTAL %	2.5	11.6	2.5	9.0	25.6
OTHER	NUMBER	0	0	0	37	37
	ROW %	0.0	0.0	0.0	100.0	
	COLUMN %	0.0	0.0	0.0	41.1	
	TOTAL %	0.0	0.0	0.0	18.6	18.6
TOTALS		55	42	12	90	199
		27.6	21.1	6.0	45.2	100.0

WEEKDAY IS FROM 00:00 MONDAY TO 17:59 FRIDAY
WEEKEND IS FROM 18:00 FRIDAY TO 2359 SUNDAY

$df = 2 \quad \alpha = .05$
critical value = 5.991

$\chi^2 = 50.93$

BREAK AND ENTER IN OTTAWA WEST
TIME OF DAY VERSUS PORTION OF THE WEEK
FROM FEB 01, 1987 TO APR 30, 1987

NUMBER ROW % COLUMN % TOTAL %	07:00 TO 17:59	18:00 TO 23:59	24:00 TO 06:59	OTHER	TOTALS
WEEKDAY	91	20	13	39	163
	55.8	12.3	8.0	23.9	
	71.9	54.1	61.9	33.3	
	33.2	7.3	4.7	14.2	59.5
WEEKEND	8	17	8	32	65
	12.3	26.2	12.3	49.2	
	8.1	45.9	38.1	27.4	
	2.9	6.2	2.9	11.7	23.7
OTHER	0	0	0	46	46
	0.0	0.0	0.0	100.0	
	0.0	0.0	0.0	39.3	
	0.0	0.0	0.0	16.8	16.8
TOTALS	99	37	21	117	274
	36.1	13.5	7.7	42.7	100.0

WEEKDAY IS FROM 00:00 MONDAY TO 17:59 FRIDAY
WEEKEND IS FROM 18:00 FRIDAY TO 2359 SUNDAY

$df = 2 \quad \alpha = .05$
critical value = 5.991

$\chi^2 = 21.52$

BREAK AND ENTER IN OTTAWA EAST
TIME OF DAY VERSUS PORTION OF THE WEEK
FROM FEB-01-1987 TO APR 30, 1987

NUMBER ROW % COLUMN % TOTAL %	07:00 TO 17:59	18:00 TO 23:59	24:00 TO 06:59	OTHER	TOTALS
WEEKDAY	121	29	18	39	207
	58.5	14.0	8.7	18.8	
	92.4	46.0	66.7	34.5	
	36.2	8.7	5.4	11.7	62.0
WEEKEND	10	34	9	38	91
	11.0	37.4	9.9	41.8	
	7.6	54.0	33.3	33.6	
	3.0	10.2	2.7	11.4	27.2
OTHER	0	0	0	36	36
	0.0	0.0	0.0	100.0	
	0.0	0.0	0.0	31.9	
	0.0	0.0	0.0	10.8	10.8
TOTALS	131	63	27	113	334
	39.2	18.9	8.1	33.8	100.0

WEEKDAY IS FROM 00:00 MONDAY TO 17:59 FRIDAY
WEEKEND IS FROM 18:00 FRIDAY TO 23:59 SUNDAY

$df = 2 \quad \alpha = .05$
critical value = 5.911

$\chi^2 = 93.93$

BREAK AND ENTER IN OTTAWA SOUTH
TIME OF DAY VERSUS PORTION OF THE WEEK
FROM FEB-01-1987 TO APR 30, 1987

		07:00 TO 17:59	18:00 TO 23:59	24:00 TO 06:59	OTHER	TOTALS
WEEKDAY	NUMBER	33	20	2	30	85
	ROW %	38.8	23.5	2.4	35.3	
	COLUMN %	91.7	66.7	22.2	44.1	
	TOTAL %	23.1	14.0	1.4	21.0	59.4
WEEKEND	NUMBER	3	10	7	16	36
	ROW %	8.3	27.8	19.4	44.4	
	COLUMN %	8.3	33.3	77.8	23.5	
	TOTAL %	2.1	7.0	4.9	11.2	25.2
OTHER	NUMBER	0	0	0	22	22
	ROW %	0.0	0.0	0.0	100.0	
	COLUMN %	0.0	0.0	0.0	32.4	
	TOTAL %	0.0	0.0	0.0	15.4	15.4
TOTALS		36	30	9	68	143
		25.2	21.0	6.3	47.6	100.0

WEEKDAY IS FROM 00:00 MONDAY TO 17:59 FRIDAY
WEEKEND IS FROM 18:00 FRIDAY TO 23:59 SUNDAY

$df = 2 \quad \alpha = .05$
critical value = 5.991

$\chi^2 = 27.76$

APPENDIX C

BREAK AND ENTER IN OTTAWA AREA
POINT OF ENTRY VERSUS TYPE OF STRUCTURE
FROM FEB 01, 1987 TO APR 30, 1987

NUMBER ROW % COLUMN % TOTAL %	FRONT DOOR	SIDE DOOR	REAR DOOR	PATIO/ BALCONY DOOR	DOOR UNSTATED	FRONT WINDOW	SIDE WINDOW	REAR WINDOW	BALCONY WINDOW	BASEMENT WINDOW	WINDOW UNSTATED	OTHER	TOTALS
SINGLE FAMILY DWELLING	63	24	73	25	30	4	15	43	1	30	21	19	348
	18.1	6.9	21.0	7.2	8.6	1.1	4.3	12.4	0.3	8.6	6.0	5.5	
	22.7	92.3	60.8	37.3	34.9	57.1	44.1	76.8	7.7	54.5	25.3	15.2	
	6.6	2.5	7.7	2.6	3.2	0.4	1.6	4.5	0.1	3.2	2.2	2.0	36.6
LOW-RISE APARTMENTS	57	2	27	5	30	0	7	3	0	7	19	24	181
	31.5	1.1	14.9	2.8	16.6	0.0	3.9	1.7	0.0	3.9	10.5	13.3	
	20.5	7.7	22.5	7.5	34.9	0.0	20.6	5.4	0.0	12.7	22.9	19.2	
	6.0	0.2	2.8	0.5	3.2	0.0	0.7	0.3	0.0	0.7	2.0	2.5	19.1
HIGH-RISE APARTMENTS	129	0	13	25	23	0	11	4	12	1	31	70	319
	40.4	0.0	4.1	7.8	7.2	0.0	3.4	1.3	3.8	0.3	9.7	21.9	
	46.4	0.0	10.3	37.3	26.7	0.0	32.4	7.1	92.3	1.8	37.3	56.0	
	13.6	0.0	1.4	2.6	2.4	0.0	1.2	0.4	1.3	0.1	3.3	7.4	33.6
TOWNHOUSE	24	0	6	11	2	2	1	4	0	10	7	8	76
	31.6	0.0	7.9	14.5	3.9	2.6	1.3	5.3	0.0	13.2	9.2	10.5	
	8.6	0.0	5.0	16.4	3.5	28.6	2.9	7.1	0.0	18.2	8.4	6.4	
	2.5	0.0	0.6	1.2	0.3	0.2	0.1	0.4	0.0	1.1	0.7	0.8	8.0
ROWHOUSE	4	0	1	1	0	1	0	2	0	7	4	4	24
	16.7	0.0	4.2	4.2	0.0	4.2	0.0	8.3	0.0	29.2	16.7	16.7	
	1.4	0.0	0.8	1.5	0.0	14.3	0.0	3.6	0.0	12.7	4.8	3.2	
	0.4	0.0	0.1	0.1	0.0	0.1	0.0	0.2	0.0	0.7	0.4	0.4	2.5
OTHER	1	0	0	0	0	0	0	0	0	0	1	0	2
	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	
	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	
	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2
TOTALS	278	26	120	67	86	7	34	56	13	55	83	125	950
	29.3	2.7	12.6	7.1	9.1	0.7	3.6	5.9	1.4	5.8	8.7	13.2	100.0

degrees of freedom = 24
$\alpha = .05$
critical value = 36.415

$\chi^2 = 1146.98$

BREAK AND ENTER IN OTTAWA CENTER
POINT OF ENTRY VERSUS TYPE OF STRUCTURE
FROM FEB 01, 1987 TO APR 30, 1987

NUMBER ROW % COLUMN % TOTAL %	FRONT DOOR	SIDE DOOR	REAR DOOR	PATIO/ BALCONY DOOR	DOOR UNSTATED	FRONT WINDOW	SIDE WINDOW	REAR WINDOW	BALCONY WINDOW	BASEMENT WINDOW	WINDOW UNSTATED	OTHER	TOTALS
SINGLE FAMILY DWELLING	13	8	21	5	8	0	2	5	0	3	2	4	71
	18.3	11.3	29.6	7.0	11.3	0.0	2.8	7.0	0.0	4.2	2.8	5.6	
	32.5	100.0	56.8	35.7	21.1	0.0	33.3	83.3	0.0	50.0	10.5	18.2	
	6.5	4.0	10.6	2.5	4.0	0.0	1.0	2.5	0.0	1.5	1.0	2.0	35.7
LOW-RISE APARTMENTS	17	0	11	3	18	0	2	1	0	3	7	6	68
	25.0	0.0	16.2	4.4	26.5	0.0	2.9	1.5	0.0	4.4	10.3	8.8	
	42.5	0.0	29.7	21.4	47.4	0.0	33.3	16.7	0.0	50.0	36.8	27.3	
	8.5	0.0	5.5	1.5	9.0	0.0	1.0	0.5	0.0	1.5	3.5	3.0	34.2
HIGH-RISE APARTMENTS	9	0	5	6	11	0	2	0	3	0	10	12	58
	15.5	0.0	8.6	10.3	19.0	0.0	3.4	0.0	5.2	0.0	17.2	20.7	
	22.5	0.0	13.5	42.9	28.9	0.0	33.3	0.0	100.0	0.0	52.6	54.5	
	4.5	0.0	2.5	3.0	5.5	0.0	1.0	0.0	1.5	0.0	5.0	6.0	29.1
TOWNHOUSE	1	0	0	0	1	0	0	0	0	0	0	0	2
	50.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	2.5	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	0.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
ROWHOUSE	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	
	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OTHER	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	
	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	40	8	37	14	38	0	6	6	3	6	19	22	199
	20.1	4.0	18.6	7.0	19.1	0.0	3.0	3.0	1.5	3.0	9.5	11.1	100.0

BREAK AND ENTER IN OTTAWA WEST
POINT OF ENTRY VERSUS TYPE OF STRUCTURE
FROM FEB 01, 1987 TO APR 30, 1987

	FRONT DOOR	SIDE DOOR	REAR DOOR	PATIO/ BALCONY DOOR	DOOR UNSTATED	FRONT WINDOW	SIDE WINDOW	REAR WINDOW	BALCONY WINDOW	BASEMENT WINDOW	WINDOW UNSTATED	OTHER	TOTALS
SINGLE FAMILY DWELLING	23	4	14	2	16	2	1	11	0	13	11	5	102
	22.5	3.9	13.7	2.0	15.7	2.0	1.0	10.8	0.0	12.7	10.8	4.9	
	28.8	100.0	63.6	12.5	45.7	66.7	100.0	84.6	0.0	86.7	31.4	11.6	
	8.4	1.5	5.1	0.7	5.8	0.7	0.4	4.0	0.0	4.7	4.0	1.8	37.2
LOW-RISE APARTMENTS	9	0	4	0	10	0	0	0	0	1	3	6	33
	27.3	0.0	12.1	0.0	30.3	0.0	0.0	0.0	0.0	3.0	9.1	18.2	
	11.3	0.0	18.2	0.0	28.6	0.0	0.0	0.0	0.0	6.7	8.6	14.0	
	3.3	0.0	1.5	0.0	3.6	0.0	0.0	0.0	0.0	0.4	1.1	2.2	12.0
HIGH-RISE APARTMENTS	44	0	2	13	9	0	0	0	7	0	11	26	112
	39.3	0.0	1.8	11.6	8.0	0.0	0.0	0.0	6.3	0.0	9.8	23.2	
	55.0	0.0	9.1	81.3	25.7	0.0	0.0	0.0	100.0	0.0	31.4	60.5	
	16.1	0.0	0.7	4.7	3.3	0.0	0.0	0.0	2.6	0.0	4.0	9.5	40.9
TOWNHOUSE	3	0	1	1	0	1	0	1	0	0	6	4	17
	17.6	0.0	5.9	5.9	0.0	5.9	0.0	5.9	0.0	0.0	35.3	23.5	
	3.8	0.0	4.5	6.3	0.0	33.3	0.0	7.7	0.0	0.0	17.1	9.3	
	1.1	0.0	0.4	0.4	0.0	0.4	0.0	0.4	0.0	0.0	2.2	1.5	6.2
ROWHOUSE	1	0	1	0	0	0	0	1	0	1	4	2	10
	10.0	0.0	10.0	0.0	0.0	0.0	0.0	10.0	0.0	10.0	40.0	20.0	
	1.3	0.0	4.5	0.0	0.0	0.0	0.0	7.7	0.0	6.7	11.4	4.7	
	0.4	0.0	0.4	0.0	0.0	0.0	0.0	0.4	0.0	0.4	1.5	0.7	3.6
OTHER	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	80	4	22	16	35	3	1	13	7	15	35	43	274
	29.2	1.5	8.0	5.8	12.8	1.1	0.4	4.7	2.6	5.5	12.8	15.7	100.0

BREAK AND ENTER IN OTTAWA EAST
POINT OF ENTRY VERSUS TYPE OF STRUCTURE
FROM FEB 01, 1987 TO APR 30, 1987

NUMBER ROW % COLUMN % TOTAL %	FRONT DOOR	SIDE DOOR	REAR DOOR	PATIO/ BALCONY DOOR	DOOR UNSTATED	FRONT WINDOW	SIDE WINDOW	REAR WINDOW	BALCONY WINDOW	BASEMENT WINDOW	WINDOW UNSTATED	OTHER	TOTALS
SINGLE FAMILY DWELLING	20	9	30	14	5	1	7	18	1	11	3	5	124
	16.1	7.3	24.2	11.3	4.0	0.8	5.6	14.5	0.8	8.9	2.4	4.0	
	16.8	81.8	65.2	60.9	50.0	100.0	36.8	69.2	33.3	68.8	13.6	13.2	
	6.0	2.7	9.0	4.2	1.5	0.3	2.1	5.4	0.3	3.3	0.9	1.5	37.1
LOW-RISE APARTMENTS	30	2	12	2	2	0	5	2	0	3	9	12	79
	38.0	2.5	15.2	2.5	2.5	0.0	6.3	2.5	0.0	3.8	11.4	15.2	
	25.2	18.2	26.1	8.7	20.0	0.0	26.3	7.7	0.0	18.8	40.9	31.6	
	9.0	0.6	3.6	0.6	0.6	0.0	1.5	0.6	0.0	0.9	2.7	3.6	23.7
HIGH-RISE APARTMENTS	65	0	3	4	2	0	7	3	2	0	10	20	116
	56.0	0.0	2.6	3.4	1.7	0.0	6.0	2.6	1.7	0.0	8.6	17.2	
	54.6	0.0	6.5	17.4	20.0	0.0	36.8	11.5	66.7	0.0	45.5	52.6	
	19.5	0.0	0.9	1.2	0.6	0.0	2.1	0.9	0.6	0.0	3.0	6.0	34.7
TOWNHOUSE	3	0	1	3	1	0	0	2	0	1	0	0	11
	27.3	0.0	9.1	27.3	9.1	0.0	0.0	18.2	0.0	9.1	0.0	0.0	
	2.5	0.0	2.2	13.0	10.0	0.0	0.0	7.7	0.0	6.3	0.0	0.0	
	0.9	0.0	0.3	0.9	0.3	0.0	0.0	0.6	0.0	0.3	0.0	0.0	3.3
ROWHOUSE	0	0	0	0	0	0	0	1	0	1	0	1	3
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.3	0.0	33.3	0.0	33.3	
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	0.0	6.3	0.0	2.6	
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.3	0.0	0.3	0.9
OTHER	1	0	0	0	0	0	0	0	0	0	0	0	1
	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
TOTALS	119	11	46	23	10	1	19	26	3	16	22	38	334
	35.6	3.3	13.8	6.9	3.0	0.3	5.7	7.8	0.9	4.8	6.6	11.4	100.0

BREAK AND ENTER IN OTTAWA SOUTH
POINT OF ENTRY VERSUS TYPE OF STRUCTURE
FROM FEB 01, 1987 TO APR 30, 1987

NUMBER ROW % COLUMN % TOTAL %	FRONT DOOR	SIDE DOOR	REAR DOOR	PATIO/ BALCONY DOOR	DOOR UNSTATED	FRONT WINDOW	SIDE WINDOW	REAR WINDOW	BALCONY WINDOW	BASEMENT WINDOW	WINDOW UNSTATED	OTHER	TOTALS
SINGLE FAMILY DWELLING	7	3	8	4	1	1	5	9	0	3	5	5	51
	13.7	5.9	15.7	7.8	2.0	2.0	9.8	17.6	0.0	5.9	9.8	9.8	
	17.9	100.0	53.3	28.6	33.3	33.3	62.5	81.8	0.0	16.7	71.4	22.7	
	4.9	2.1	5.6	2.8	0.7	0.7	3.5	6.3	0.0	2.1	3.5	3.5	35.7
LOW-RISE APARTMENTS	1	0	0	0	0	0	0	0	0	0	0	0	1
	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
HIGH-RISE APARTMENTS	11	0	3	2	1	0	2	1	0	1	0	12	33
	33.3	0.0	9.1	6.1	3.0	0.0	6.1	3.0	0.0	3.0	0.0	36.4	
	28.2	0.0	20.0	14.3	33.3	0.0	25.0	9.1	0.0	5.6	0.0	54.5	
	7.7	0.0	2.1	1.4	0.7	0.0	1.4	0.7	0.0	0.7	0.0	8.4	23.1
TOWNHOUSE	17	0	4	7	1	1	1	1	0	9	1	4	46
	37.0	0.0	8.7	15.2	2.2	2.2	2.2	2.2	0.0	17.6	2.2	8.7	
	43.6	0.0	26.7	50.0	33.3	33.3	12.5	9.1	0.0	50.0	14.3	18.2	
	11.9	0.0	2.8	4.9	0.7	0.7	0.7	0.7	0.0	6.3	0.7	2.8	32.2
ROWHOUSE	3	0	0	1	0	1	0	0	0	5	0	1	11
	27.3	0.0	0.0	9.1	0.0	9.1	0.0	0.0	0.0	45.5	0.0	9.1	
	7.7	0.0	0.0	7.1	0.0	33.3	0.0	0.0	0.0	27.8	0.0	4.5	
	2.1	0.0	0.0	0.7	0.0	0.7	0.0	0.0	0.0	3.5	0.0	0.7	7.7
OTHER	0	0	0	0	0	0	0	0	0	0	1	0	1
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.3	0.0	
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.7
TOTALS	39	3	15	11	3	3	8	11	0	18	7	22	143
	27.3	2.1	10.5	7.8	2.1	2.1	5.6	7.7	0.0	12.6	4.9	15.4	100.0

APPENDIX D

BREAK AND ENTER IN OTTAWA AREA
POINT OF ENTRY VERSUS TIME OF THE DAY
FROM FEB 01, 1987 TO APR 30, 1987

NUMBER ROW % COLUMN % TOTAL %	FRONT DOOR	SIDE DOOR	REAR DOOR	PATIO/ BALCONY DOOR	DOOR UNSTATED	FRONT WINDOW	SIDE WINDOW	REAR WINDOW	BALCONY WINDOW	BASEMENT WINDOW	WINDOW UNSTATED	OTHER	TOTALS
DAYTIME 07:00 - 17:59	125	7	40	16	31	0	7	11	3	14	17	50	321
	38.9	2.2	12.5	5.0	9.7	0.0	2.2	3.4	0.9	4.4	5.3	15.6	
	45.0	26.9	33.3	23.9	36.0	0.0	20.6	19.6	23.1	25.5	20.5	40.0	
	13.2	0.7	4.2	1.7	3.3	0.0	0.7	1.2	0.3	1.5	1.8	5.3	33.8
EVENING 17:00 - 23:59	40	8	24	14	12	1	8	14	1	16	19	15	172
	23.3	4.7	14.0	8.1	7.0	0.6	4.7	8.1	0.6	9.3	11.0	8.7	
	14.4	30.8	20.0	20.9	14.0	14.3	23.5	25.0	7.7	29.1	22.9	12.0	
	4.2	0.8	2.5	1.5	1.3	0.1	0.8	1.5	0.1	1.7	2.0	1.6	18.1
NIGHT 24:00 - 06:59	21	4	8	4	6	1	3	7	0	2	6	7	69
	30.4	5.8	11.6	5.8	8.7	1.4	4.3	10.1	0.0	2.9	8.7	10.1	
	7.6	15.4	6.7	6.0	7.0	14.3	8.8	12.5	0.0	3.6	7.2	5.6	
	2.2	0.4	0.8	0.4	0.6	0.1	0.3	0.7	0.0	0.2	0.6	0.7	7.3
OTHER	92	7	48	33	37	5	16	24	9	23	41	53	388
	23.7	1.8	12.4	8.5	9.5	1.2	4.1	6.2	2.3	5.9	10.6	13.7	
	33.1	26.9	40.0	49.3	43.0	71.4	47.1	42.9	69.2	41.8	47.4	42.4	
	9.7	0.7	5.1	3.5	3.9	0.5	1.7	2.5	1.9	2.4	4.3	5.6	40.8
TOTALS	278	26	120	67	86	7	34	56	13	55	83	125	950
	29.3	2.7	12.6	7.1	9.1	0.7	3.6	5.9	1.4	5.8	8.7	13.2	100.0

degrees of freedom = 16
$\alpha = .05$
critical value = 26.296

$\chi^2 = 195.13$

BREAK AND ENTER IN OTTAWA CENTER
POINT OF ENTRY VERSUS TIME OF THE DAY
FROM FEB 01, 1987 TO APR 30, 1987

NUMBER ROW % COLUMN % TOTAL %	FRONT DOOR	SIDE DOOR	REAR DOOR	PATIO/ BALCONY DOOR	DOOR UNSTATED	FRONT WINDOW	SIDE WINDOW	REAR WINDOW	BALCONY WINDOW	BASEMENT WINDOW	WINDOW UNSTATED	OTHER	TOTALS
DAYTIME 07:00 - 17:59	16	2	9	2	13	0	0	3	1	2	3	4	55
	29.1	3.6	16.4	3.6	23.6	0.0	0.0	5.5	1.8	3.6	5.5	7.3	
	40.0	25.0	24.3	14.3	34.2	0.0	0.0	50.0	33.3	33.3	15.8	18.2	
	8.0	1.0	4.5	1.0	6.5	0.0	0.0	1.5	0.5	1.0	1.5	2.0	27.6
EVENING 17:00 - 23:59	5	4	8	3	5	0	3	2	1	0	5	6	42
	11.9	9.5	19.0	7.1	11.9	0.0	7.1	4.8	2.4	0.0	11.9	14.3	
	12.5	50.0	21.6	21.4	13.2	0.0	50.0	33.3	33.3	0.0	26.3	27.3	
	2.5	2.0	4.0	1.5	2.5	0.0	1.5	1.0	0.5	0.0	2.5	3.0	21.1
NIGHT 24:00 - 06:59	2	1	3	0	2	0	0	0	0	1	2	1	12
	16.7	8.3	25.0	0.0	16.7	0.0	0.0	0.0	0.0	8.3	16.7	8.3	
	5.0	12.5	8.1	0.0	5.3	0.0	0.0	0.0	0.0	16.7	10.5	4.5	
	1.0	0.5	1.5	0.0	1.0	0.0	0.0	0.0	0.0	0.5	1.0	0.5	6.0
OTHER	17	1	17	9	18	0	3	1	1	3	9	11	90
	18.9	1.1	18.9	10.0	20.0	0.0	3.3	1.1	1.1	3.3	10.0	12.2	
	42.5	12.5	45.9	64.3	47.4	0.0	50.0	16.7	33.3	50.0	47.4	50.0	
	8.5	0.5	8.5	4.5	9.0	0.0	1.5	0.5	0.5	1.5	4.5	5.5	45.2
TOTALS	40	8	37	14	38	0	6	6	3	6	19	22	199
	20.1	4.0	18.6	7.0	19.1	0.0	3.0	3.0	1.5	3.0	9.5	11.1	100.0

$df = 18 \quad \alpha = .05$

critical value = 28.869

$\chi^2 = 18.59$

BREAK AND ENTER IN OTTAWA WEST
POINT OF ENTRY VERSUS TIME OF THE DAY
- FROM FEB 01, 1987 TO APR 30, 1987

	NUMBER ROW % COLUMN % TOTAL %	FRONT DOOR	SIDE DOOR	REAR DOOR	PATIO/ BALCONY DOOR	DOOR UNSTATED	FRONT WINDOW	SIDE WINDOW	REAR WINDOW	BALCONY WINDOW	BASEMENT WINDOW	WINDOW UNSTATED	OTHER	TOTALS
DAYTIME 07:00 - 17:59		33	1	10	4	11	0	0	2	1	7	8	22	99
		33.3	1.0	10.1	4.0	11.1	0.0	0.0	2.0	1.0	7.1	8.1	22.2	
		41.3	25.0	45.5	25.0	31.4	0.0	0.0	15.4	14.3	46.7	22.9	51.2	
		12.0	0.4	3.6	1.5	4.0	0.0	0.0	0.7	0.4	2.6	2.9	8.0	36.1
EVENING 19:00 - 23:59		11	1	3	1	5	0	0	3	0	2	11	0	37
		29.7	2.7	8.1	2.7	13.5	0.0	0.0	8.1	0.0	5.4	29.7	0.0	
		13.8	25.0	13.6	6.2	14.3	0.0	0.0	23.1	0.0	13.3	31.4	0.0	
		4.0	0.4	1.1	0.4	1.8	0.0	0.0	1.1	0.0	0.7	4.0	0.0	13.5
NIGHT 24:00 - 06:59		9	1	0	0	4	1	1	0	0	0	3	2	21
		42.9	4.8	0.0	0.0	19.0	4.8	4.8	0.0	0.0	0.0	14.3	9.5	
		11.3	25.0	0.0	0.0	11.4	33.3	100.0	0.0	0.0	0.0	8.6	4.7	
		3.3	0.4	0.0	0.0	1.5	0.4	0.4	0.0	0.0	0.0	1.1	0.7	7.7
OTHER		27	1	9	11	15	2	0	8	6	6	13	19	117
		23.1	0.9	7.7	9.4	12.8	1.7	0.0	6.8	5.1	5.1	11.1	16.2	
		33.8	25.0	40.9	68.8	42.9	66.7	0.0	61.5	85.7	40.0	37.1	44.2	
		9.9	0.4	3.3	4.0	5.5	0.7	0.0	2.9	2.2	2.2	4.7	6.9	42.7
TOTALS		80	4	22	16	35	3	1	13	7	15	35	43	274
		29.2	1.5	8.0	5.8	12.8	1.1	0.4	4.7	2.6	5.5	12.8	15.7	100.0

$df = 20 \quad \alpha = .05$

critical value = 31.410

$\chi^2 = 30.59$

BREAK AND ENTER IN OTTAWA EAST
POINT OF ENTRY VERSUS TIME OF THE DAY
FROM FEB 01, 1987 TO APR 30, 1987

NUMBER ROW % COLUMN % TOTAL %	FRONT DOOR	SIDE DOOR	REAR DOOR	PATIO/ BALCONY DOOR	DOOR UNSTATED	FRONT WINDOW	SIDE WINDOW	REAR WINDOW	BALCONY WINDOW	BASEMENT WINDOW	WINDOW UNSTATED	OTHER	TOTALS
DAYTIME 07:00 - 17:59	51	3	17	8	6	0	5	5	1	3	6	16	131
	38.4	2.3	13.0	6.1	4.6	0.0	3.8	3.8	0.8	2.3	4.6	12.2	
	51.3	27.3	37.0	34.8	60.0	0.0	26.3	19.2	33.3	18.8	27.3	42.1	
	15.3	0.9	5.1	2.4	1.8	0.0	1.5	1.5	0.3	0.9	1.8	4.8	39.2
EVENING 17:00 - 23:59	16	3	9	5	2	0	5	7	0	9	3	4	63
	25.4	4.8	14.3	7.9	3.2	0.0	7.9	11.1	0.0	14.3	4.8	6.3	
	16.4	27.3	19.6	21.7	20.0	0.0	26.3	26.9	0.0	56.3	13.6	10.5	
	4.8	0.9	2.7	1.5	0.6	0.0	1.5	2.1	0.0	2.7	0.9	1.2	18.9
NIGHT 24:00 - 06:59	8	2	3	4	0	0	2	4	0	1	1	2	27
	27.6	7.4	11.1	14.8	0.0	0.0	7.4	14.8	0.0	3.7	3.7	7.4	
	6.7	18.2	6.5	17.4	0.0	0.0	10.5	15.4	0.0	6.3	4.5	5.3	
	2.4	0.6	0.9	1.2	0.0	0.0	0.6	1.2	0.0	0.3	0.3	0.6	8.1
OTHER	34	3	17	6	2	1	7	10	2	3	12	16	113
	30.1	2.7	15.0	5.3	1.8	0.9	6.2	8.8	1.8	2.7	10.6	14.2	
	28.6	27.3	37.0	26.1	20.0	100.0	36.8	38.5	66.7	18.8	54.5	42.1	
	10.2	0.9	5.1	1.8	0.6	0.3	2.1	3.0	0.6	0.9	3.6	4.8	33.8
TOTALS	119	11	46	23	10	1	19	26	3	16	22	38	334
	35.6	3.3	13.8	6.9	3.0	0.3	5.7	7.8	0.9	4.8	6.6	11.4	100.0

$df = 18 \quad \alpha = .05$

critical value = 28.869

$\chi^2 = 29.10$

BREAK AND ENTER IN OTTAWA SOUTH
POINT OF ENTRY VERSUS TIME OF THE DAY
- FROM FEB 01, 1987 TO APR 30, 1987

	NUMBER ROW % COLUMN % TOTAL %	FRONT DOOR	SIDE DOOR	REAR DOOR	PATIO/ BALCONY DOOR	DOOR UNSTATED	FRONT WINDOW	SIDE WINDOW	REAR WINDOW	BALCONY WINDOW	BASEMENT WINDOW	WINDOW UNSTATED	OTHER	TOTALS
DAYTIME 07:00 - 17:59		15	1	4	2	1	0	2	1	0	2	0	8	36
		41.7	2.8	11.1	5.6	2.8	0.0	5.6	2.8	0.0	5.6	0.0	22.2	
		38.5	33.3	26.7	14.3	33.3	0.0	25.0	9.1	0.0	11.1	0.0	36.4	
		10.5	0.7	2.8	1.4	0.7	0.0	1.4	0.7	0.0	1.4	0.0	5.6	25.2
EVENING 17:00 - 23:59		8	0	4	5	0	1	0	2	0	5	0	5	30
		26.7	0.0	13.3	16.7	0.0	3.3	0.0	6.7	0.0	16.7	0.0	16.7	
		20.5	0.0	26.7	35.7	0.0	33.3	0.0	18.2	0.0	27.8	0.0	22.7	
		5.6	0.0	2.8	3.5	0.0	0.7	0.0	1.4	0.0	3.5	0.0	3.5	21.0
NIGHT 24:00 - 04:59		2	0	2	0	0	0	0	3	0	0	0	2	9
		22.2	0.0	22.2	0.0	0.0	0.0	0.0	33.3	0.0	0.0	0.0	22.2	
		5.1	0.0	13.3	0.0	0.0	0.0	0.0	27.3	0.0	0.0	0.0	9.1	
		1.4	0.0	1.4	0.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	1.4	6.3
OTHER		14	2	5	7	2	2	6	5	0	11	7	7	68
		20.6	2.9	7.4	10.3	2.9	2.9	8.8	7.4	0.0	16.2	10.3	10.3	
		35.9	66.7	33.3	50.0	66.7	66.7	75.0	45.5	0.0	61.1	100.0	31.8	
		9.8	1.4	3.5	4.9	1.4	1.4	4.2	3.5	0.0	7.7	4.9	4.9	47.6
	TOTALS	39	3	15	14	3	3	8	11	0	18	7	22	143
		27.3	2.1	10.5	9.8	2.1	2.1	5.6	7.7	0.0	12.6	4.9	15.4	100.0

$df = 16 \quad \alpha = .05$

critical value = 26.296

$\chi^2 = 22.79$

APPENDIX E

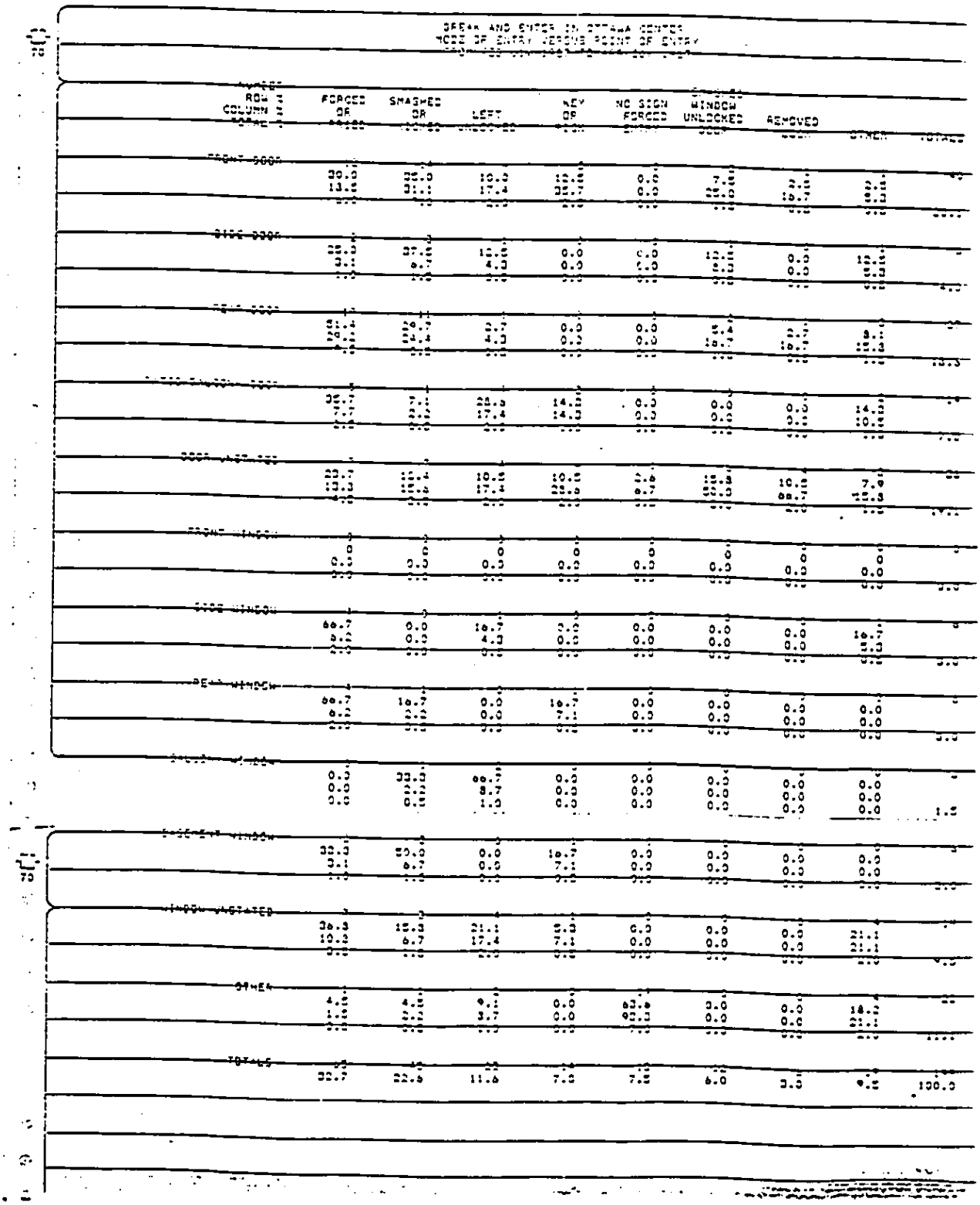
BREAK AND ENTER IN OTTAWA AREA
MODE OF ENTRY VERSUS POINT OF ENTRY
FROM FEB 01 1987 TO APR 30 1987

NUMBER ROW % COLUMN % TOTAL %	FORCED OR PRIED	SMASHED OR PICKED	LEFT UNLOCKED	KEY OR PICK	NO SIGN FORCED ENTRY	SMASHED WINDOW UNLOCKED DOOR	REMOVED LOCK	OTHER	TOTALS
FRONT DOOR	104 37.4 30.5 10.9	61 21.9 34.9 6.4	72 7.9 23.9 2.3	32 12.6 64.0 3.7	1 0.4 1.0 0.1	10 3.8 27.8 1.0	31 11.2 66.0 3.3	8 2.9 9.8 0.8	279 29.3
SIDE DOOR	6 23.1 1.8 0.6	7 26.9 4.0 0.7	4 15.4 4.3 0.4	0 0.0 0.0 0.0	0 0.0 0.0 0.0	6 23.1 16.7 0.6	0 0.0 0.0 0.0	3 11.5 3.7 0.3	26 2.7
REAR DOOR	54 45.0 15.8 5.7	22 18.3 12.6 2.3	10 8.3 10.9 1.1	2 1.7 3.7 0.2	0 0.0 0.0 0.0	18 15.0 31.0 1.9	3 2.5 8.8 0.3	11 9.2 13.2 1.1	120 12.6
PATIO/BALCONY DOOR	35 52.2 10.3 3.7	2 3.0 1.1 0.2	14 20.9 15.2 1.5	3 4.5 5.6 0.3	0 0.0 0.0 0.0	7 10.4 12.1 0.7	2 3.0 4.3 0.2	4 6.0 4.9 0.4	67 7.1
DOOR UNSTATED	18 22.1 5.4 2.0	17 20.9 10.3 1.9	6 8.1 7.6 0.7	10 11.6 18.5 1.1	2 2.3 2.0 0.2	11 12.8 19.0 1.2	10 11.6 21.3 1.1	9 10.5 11.0 0.9	86 9.1
FRONT WINDOW	1 37.1 1.2 0.4	1 14.3 0.6 0.1	2 28.6 2.2 0.2	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	7 0.7
SIDE WINDOW	19 50.0 5.0 1.8	10 29.4 5.7 1.1	3 8.8 3.3 0.3	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	4 11.8 4.9 0.4	34 3.6
REAR WINDOW	37 66.1 10.7 3.9	6 10.7 3.1 0.6	6 10.7 6.5 0.6	1 1.8 1.9 0.1	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	2 3.6 2.7 0.2	56 5.9
BASEMENT WINDOW	7 15.4 0.6 0.2	21 46.2 3.4 0.6	7 23.1 3.3 0.3	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	7 15.4 2.4 0.2	45 1.4
SKYLIGHT WINDOW	18 47.3 1.6 0.7	10 26.3 10.9 2.0	2 5.3 2.2 0.2	2 5.3 3.7 0.2	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	4 10.5 7.3 0.6	38 3.9
WINDOW UNSTATED	35 41.2 10.3 3.7	16 18.8 6.1 1.7	17 20.0 12.5 1.8	1 1.2 1.9 0.1	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	14 16.5 17.1 1.5	83 8.7
OTHER	2 1.6 0.6 0.2	4 3.1 1.5 0.4	2 1.6 1.5 0.2	0 0.0 0.0 0.0	98 78.4 67.0 10.3	0 0.0 0.0 0.0	0 0.0 0.0 0.0	19 15.2 23.2 2.0	125 13.2
TOTALS	341 35.9	175 18.4	92 9.7	54 5.7	101 10.6	56 5.9	46 4.9	82 8.6	950 100.0

degrees of freedom = 60

$\alpha = .05$

$\chi^2 = 199.98$



BREAK AND ENTER IN OTTAWA WEST
MODE OF ENTRY BY PREMISE POINT OF ENTRY
FROM 1981 TO 1985 INCLUSIVE

ROW % COLUMN % TOTAL %	FORCED OR PRIED	SMASHED OR BROKEN	LEFT UNSECURED	KEY OR PICK	NO SIGN FORCED ENTRY	WINDOW UNLOCKED DOOR	REMOVED DOOR	OTHER	TOTALS
FRONT DOOR	33.3 28.7	17.9 33.3	3.0 17.6	23.8 72.1	1.0 2.4	3.0 21.4	15.0 83.3	1.0 5.9	
SIDE DOOR	25.0 1.1	50.0 4.3	0.0 0.0	0.0 0.0	0.0 0.0	25.0 7.1	0.0 0.0	0.0 0.0	
REAR DOOR	54.5 13.8	13.6 8.3	4.5 5.9	0.0 0.0	0.0 0.0	22.7 35.7	0.0 0.0	4.5 11.8	
BASEMENT DOOR	50.0 9.5	8.3 2.2	16.7 17.6	0.0 0.0	0.0 0.0	16.7 14.3	8.3 16.7	0.0 0.0	
GARAGE DOOR	20.0 7.5	17.1 12.0	5.7 17.6	17.1 23.1	2.9 2.4	5.7 21.4	17.1 33.3	5.7 17.6	
CELLAR WINDOW	66.7 2.1	0.0 0.0	33.3 5.9	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	
OTHER WINDOW	0.0 0.0	0.0 0.0	100.0 5.9	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	
OTHER DOOR	69.2 6.9	23.1 3.3	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	7.7 5.9	
TOTAL	28.6 2.1 0.7	27.1 3.7 1.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	14.3 5.9 0.4	2.8
PATIO DOOR	66.7 10.3	26.7 8.7	0.0 0.0	6.7 3.8	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	
UNDETERMINED	42.9 16.0	28.7 19.6	14.3 29.4	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	17.1 55.3	
OTHER	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	90.7 88.1	0.0 0.0	0.0 0.0	9.3 23.5	
TOTALS	34.2	18.8	8.2	9.5	15.0	8.1	6.9	6.2	100.0

BREAK AND ENTER IN OTTAWA EAST
MODE OF ENTRY VERSUS POINT OF ENTRY

ROW % COLUMN % TOTAL %	FORCED OR	SMASHED OR	LEFT	KEY OR	NO SIGN FORCED	WINDOW UNLOCKED	REMOVED		
FRONT DOOR	40.9 39.6	31.8 45.8	9.1 30.6	6.7 50.0	0.0 0.0	9.9 29.0	10.1 75.0	3.4 13.3	
BACK DOOR	18.2 1.6	9.1 1.7	27.3 8.3	0.0 0.0	0.0 0.0	27.3 10.0	0.0 0.0	18.2 6.7	
SIDE DOOR	39.1 14.1	15.2 11.7	8.7 11.1	4.3 20.0	0.0 0.0	17.4 32.0	6.5 18.3	8.7 13.3	
PATIO DOOR	47.8 3.6	0.0 0.0	21.7 12.9	0.0 0.0	0.0 0.0	21.7 20.0	4.3 6.2	4.3 3.3	
GARAGE DOOR	30.0 1.2	30.0 5.0	0.0 0.0	0.0 0.0	0.0 0.0	20.0 8.0	0.0 0.0	20.0 6.7	
BASEMENT WINDOW	0.0 0.0	100.0 1.7	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	
OTHER WINDOW	47.4 7.0	36.8 11.7	5.3 2.8	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	10.5 6.7	
OTHER OPENING	69.2 14.1	11.5 3.3	11.5 8.3	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	7.7 6.7	
	0.0 0.0 0.0	33.3 1.7 0.3	33.3 2.8 0.3	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	33.3 3.3 0.3	0.0
UNKNOWN	40.0 2.5	31.3 3.3	12.5 2.8	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	12.5 6.7	
OTHER	40.9 7.0	18.2 6.7	27.3 16.7	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	13.6 10.0	
	0.0 0.0	9.3 3.3	0.0 0.0	0.0 0.0	76.3 100.0	0.0 0.0	0.0 0.0	18.4 33.3	
	34.3	18.0	10.8	3.0	8.7	7.5	4.8	9.0	100.0

BREAK AND ENTER IN OTTAWA SOUTH
MODE OF ENTRY VERSUS POINT OF ENTRY

ROW # / COLUMN #	FORCED OR	SMASHED OR	LEFT	KEY OR	NO SIGN FORCED	WINDOW UNLOCKED	REMOVED	OTHER	TOTALS
	28.9 25.6 0.0	17.9 26.2 0.0	10.3 28.6 0.0	7.7 75.0 0.0	0.0 0.0 0.0	7.7 42.9 0.0	10.4 100.0 0.0	5.1 12.5 0.0	39
	33.3 1.9 0.0	33.3 4.2 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	33.3 14.3 0.0	0.0 0.0 0.0	0.0 0.0 0.0	3
	33.3 1.9 0.0	6.7 4.2 0.0	26.7 28.6 0.0	0.0 0.0 0.0	0.0 0.0 0.0	20.0 28.6 0.0	0.0 0.0 0.0	13.3 12.5 0.0	15 15.0
	21.4 10.9 0.0	0.0 0.0 0.0	14.3 12.5 0.0	7.1 25.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	7.1 6.3 0.0	14 14.0
	0.0 0.0 0.0	66.7 3.8 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	33.3 6.3 0.0	3 3.0
	66.7 3.7 0.0	0.0 0.0 0.0	33.3 6.3 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	3 3.0
	50.0 7.4 0.0	37.5 10.5 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	12.5 6.3 0.0	8 8.0
	54.5 11.1 0.0	18.2 5.3 0.0	27.3 10.3 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	11 11.0
	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0
	33.3 13.0 0.0	33.3 26.3 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	33.3 33.3 0.0	3 3.0
	57.1 7.4 0.0	0.0 2.0 0.0	28.6 10.3 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	14.3 6.3 0.0	7 7.0
	4.5 1.9 0.0	4.5 4.2 0.0	0.0 0.0 0.0	0.0 0.0 0.0	72.7 100.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	18.2 25.0 0.0	22 22.0
	37.8	16.8	11.2	2.8	11.2	4.9	4.2	11.2	100.0

APPENDIX F

BREAK AND ENTER IN OTTAWA AREA
MODE OF ENTRY VERSUS TYPE OF STRUCTURE
FROM FEB 01, 1987 TO APR 30, 1987

NUMBER ROW % COLUMN % TOTAL %	FORCED OR ENTRY	SMASHED OR KICKED	LEFT UNLOCKED	KEY OR PICK	SMASHED: NO SIGN FORCED ENTRY	SMASHED: WINDOW UNLOCKED DOOR	SMASHED: REMOVED LOCK	SMASHED: OTHER	TOTALS
SINGLE FAMILY DWELLING	142	74	33	9	5	43	10	29	346
	40.3	21.3	9.5	2.6	2.3	12.4	2.9	8.3	
	41.6	41.3	35.9	16.7	7.5	74.1	21.3	35.4	
	14.9	7.8	3.5	0.9	0.5	4.5	1.1	3.1	36.3
LOW-RISE APARTMENTS	60	43	11	8	14	10	10	17	181
	33.1	23.8	6.1	5.0	10.5	5.5	5.5	10.5	
	17.6	24.6	12.0	16.7	19.8	17.2	21.3	20.7	
	6.3	4.5	1.2	0.9	2.0	1.1	1.1	2.0	19.1
HIGH-RISE APARTMENTS	93	41	37	35	65	2	23	23	319
	29.2	12.9	11.6	11.0	20.4	0.6	7.2	7.2	
	27.3	23.4	40.2	64.8	64.4	3.4	48.9	28.0	
	9.8	4.3	3.9	3.7	6.8	0.2	2.4	2.4	33.6
TOWNHOUSE	33	9	8	0	5	3	4	7	76
	51.3	11.3	10.5	0.0	7.9	3.9	5.3	9.2	
	11.4	5.1	8.7	0.0	5.9	5.2	8.5	8.5	
	3.1	0.9	0.8	0.0	0.8	0.3	0.4	0.7	8.0
ROWHOUSE	5	8	3	1	2	0	0	4	24
	20.8	33.3	12.5	4.2	12.5	0.0	0.0	16.7	
	1.5	4.5	3.3	1.9	3.0	0.0	0.0	4.9	
	0.5	0.8	0.3	0.1	0.3	0.0	0.0	0.4	2.5
OTHER	2	0	0	0	0	0	0	0	2
	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
TOTALS	341	175	92	54	101	58	47	82	950
	35.9	18.4	9.7	5.7	10.6	6.1	4.9	8.6	100.0

$\chi^2 = 154.82$

degrees of freedom = 18

$\alpha = .05$

critical value = 28.869

BREAK AND ENTER IN OTTAWA CENTER
MODE OF ENTRY VERSUS TYPE OF STRUCTURE
FROM FEB 01, 1987 TO APR 30, 1987

NUMBER ROW % COLUMN % TOTAL %	FORCED OR PRIED	SMASHED OR KICKED	LEFT UNLOCKED	KEY OR PICK	SMASHED NO SIGN FORCED ENTRY	SMASHED WINDOW UNLOCKED DOOR	SMASHED REMOVED LOCK	SMASHED OTHER	TOTALS
SINGLE FAMILY DWELLING	29 39.4 43.1 14.1	15 21.1 32.6 7.5	7 9.9 30.4 3.5	4 5.6 28.6 2.0	1 1.4 6.7 0.5	7 9.9 58.3 3.5	3 4.2 50.0 1.5	6 8.5 31.6 3.0	71 35.7
LOW-RISE APARTMENTS	18 26.5 27.7 9.0	23 33.8 50.1 11.6	5 7.4 21.7 2.5	3 4.4 21.4 1.5	5 7.4 33.3 2.5	5 7.4 41.7 2.5	2 2.9 33.3 1.0	7 10.3 36.8 3.5	68 34.2
HIGH-RISE APARTMENTS	18 31.0 27.7 9.0	7 12.1 15.6 3.5	10 17.2 43.5 5.0	7 12.1 50.0 3.5	9 15.5 60.0 4.5	0 0.0 0.0 0.0	1 1.7 16.7 0.5	6 10.3 31.6 3.0	58 29.1
TOWNHOUSE	1 50.0 1.5 0.5	0 0.0 0.0 0.0	1 50.0 4.3 0.5	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	2 1.0
ROWHOUSE	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0.0
OTHER	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0.0
TOTALS	65 33.7	44 22.8	23 11.9	14 7.3	15 7.8	12 6.2	6 3.1	19 9.8	193 100.0

BREAK AND ENTER IN OTTAWA WEST
MODE OF ENTRY VERSUS TYPE OF STRUCTURE
FROM FEB 01, 1987 TO APR 30, 1987

NUMBER ROW % COLUMN % TOTAL %	FORCED OR PRIED	SMASHED OR KICKED	LEFT UNLOCKED	KEY OR PICK	SMASHED: NO SIGN FORCED ENTRY	SMASHED: WINDOW UNLOCKED DOOR	SMASHED: REMOVED LOCK	SMASHED: OTHER	TOTALS
SINGLE-FAMILY DWELLING	45	25	8	2	9	10	4	5	107
	44.1	24.5	7.8	2.0	2.9	9.8	3.9	4.9	
	47.9	51.3	47.1	7.7	7.3	71.4	21.1	29.4	
	16.4	9.1	2.9	0.7	3.3	3.6	1.5	1.8	39.2
LOW-RISE APARTMENTS	11	1	0	5	5	2	4	5	33
	33.3	3.0	0.0	15.2	15.2	6.1	12.1	15.2	
	11.7	2.0	0.0	19.2	12.2	14.3	21.1	29.4	
	4.0	0.4	0.0	1.8	1.8	0.7	1.5	1.8	12.0
HIGH-RISE APARTMENTS	27	14	7	19	26	2	10	5	110
	24.1	12.5	6.3	17.0	25.0	1.8	8.9	4.5	
	28.7	28.6	41.2	73.1	63.3	14.3	52.6	29.4	
	9.9	5.1	2.6	6.9	10.2	0.7	3.6	1.8	40.3
TOWNHOUSE	9	1	1	0	3	0	1	2	17
	52.9	5.9	5.9	0.0	17.6	0.0	5.9	11.8	
	9.6	2.0	5.9	0.0	7.3	0.0	5.3	11.8	
	3.3	0.4	0.4	0.0	1.1	0.0	0.4	0.7	6.2
ROWHOUSE	2	5	1	0	2	0	0	0	10
	20.0	50.0	10.0	0.0	20.0	0.0	0.0	0.0	
	2.1	10.2	5.9	0.0	4.9	0.0	0.0	0.0	
	0.7	1.8	0.4	0.0	0.7	0.0	0.0	0.0	3.6
OTHER	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	94	46	17	26	41	14	19	17	274
	34.3	16.8	6.2	9.5	15.0	5.1	6.9	6.2	100.0

BREAK AND ENTER IN OTTAWA EAST
MODE OF ENTRY VERSUS TYPE OF STRUCTURE
FROM FEB 01, 1987 TO APR 30, 1987

NUMBER ROW % COLUMN % TOTAL %	FORCED OR PRIED	SMASHED OR KICKED	LEFT UNLOCKED	KEY OR PICK	SMASHED: NO SIGN FORCED ENTRY	SMASHED: WINDOW UNLOCKED DOOR	SMASHED: REMOVED LOCK	OTHER	TOTALS
SINGLE FAMILY DWELLING	48	23	12	1	3	21	3	13	124
	38.7	18.5	9.7	0.8	2.4	16.9	2.4	10.5	
	37.5	39.0	33.3	10.0	10.3	84.0	18.8	43.3	
	14.1	6.9	3.6	0.3	0.9	6.3	0.9	3.9	37.1
LOW-RISE APARTMENTS	29	19	6	1	3	3	4	7	72
	38.0	24.1	7.6	1.3	11.1	3.3	5.1	8.9	
	23.4	41.7	16.7	10.0	31.0	12.0	25.0	23.3	
	9.0	5.7	1.8	0.3	2.7	0.9	1.2	2.1	23.7
HIGH-RISE APARTMENTS	44	16	14	8	17	0	9	8	116
	37.9	11.0	12.1	5.9	14.7	0.0	7.8	6.9	
	34.1	26.7	38.9	80.0	58.6	0.0	56.3	26.7	
	13.2	4.8	4.2	2.4	5.1	0.0	2.7	2.4	34.7
TOWNHOUSE	5	2	3	0	0	1	0	0	11
	45.5	18.2	27.3	0.0	0.0	9.1	0.0	0.0	
	3.9	3.3	8.3	0.0	0.0	4.0	0.0	0.0	
	1.5	0.6	0.9	0.0	0.0	0.3	0.0	0.0	3.3
ROWHOUSE	0	0	1	0	0	0	0	2	3
	0.0	0.0	33.3	0.0	0.0	0.0	0.0	66.7	
	0.0	0.0	2.8	0.0	0.0	0.0	0.0	6.7	
	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.6	0.9
OTHER	1	0	0	0	0	0	0	0	1
	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
TOTALS	127	60	36	10	23	25	16	30	304
	38.3	18.0	10.8	3.0	8.7	7.5	4.8	9.0	100.0

BREAK AND ENTER IN OTTAWA SOUTH
MODE OF ENTRY VERSUS TYPE OF STRUCTURE
FROM FEB 01, 1987 TO APR-30-1987

NUMBER ROW % COLUMN % TOTAL %	FORCED OR ENTRY	SMASHED OR PEELED	LEFT UNLOCKED	SMASHED: KEY OR PICK	SMASHED: NO SIGN FORCED ENTRY	SMASHED: WINDOW UNLOCKED DOOR	SMASHED: REMOVED LOCK	SMASHED: OTHER	TOTALS
SINGLE FAMILY DWELLING	21	11	6	2	1	5	0	5	51
	41.2	21.6	11.8	3.9	2.0	9.8	0.0	9.8	
	38.9	45.8	37.5	50.0	6.3	71.4	0.0	31.3	
	14.7	7.7	4.2	1.4	0.7	3.5	0.0	3.5	35.7
LOW-RISE APARTMENTS	1	0	0	0	0	0	0	0	1
	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
HIGH-RISE APARTMENTS	4	3	6	1	11	0	3	4	31
	12.1	12.1	18.2	3.0	33.3	0.0	9.1	12.1	
	7.4	16.7	37.5	25.0	68.8	0.0	50.0	25.0	
	2.8	2.8	4.2	0.7	7.7	0.0	2.1	2.8	23.1
TOWNHOUSE	24	4	3	0	3	2	3	5	46
	52.2	13.0	6.5	0.0	6.5	4.3	6.5	10.9	
	44.4	22.2	18.8	0.0	18.8	28.6	50.0	31.3	
	16.9	2.8	2.1	0.0	2.1	1.4	2.1	3.5	32.2
ROWHOUSE	3	2	1	1	1	0	0	2	11
	27.3	27.3	9.1	9.1	9.1	0.0	0.0	18.2	
	5.6	11.1	6.3	25.0	6.3	0.0	0.0	12.5	
	2.1	1.4	0.7	0.7	0.7	0.0	0.0	1.4	7.7
OTHER	1	0	0	0	0	0	0	0	1
	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
TOTALS	54	24	16	4	16	7	6	16	140
	38.9	16.9	11.2	2.8	11.2	4.9	4.2	11.2	100.0

APPENDIX G

BREAK AND ENTER IN HIGH A
TIME OF DAY VERSUS DAY OF THE WEEK
FROM FEB 01, 1987 TO APR 30, 1987

NUMBER ROW % COLUMN % TOTAL %	07:00 TO 17:59	18:00 TO 23:59	24:00 TO 06:59	OTHER	TOTALS
MONDAY	1	1	0	0	2
	50.0	50.0	0.0	0.0	
	5.3	12.5	0.0	0.0	
	2.3	2.3	0.0	0.0	4.5
TUESDAY	2	2	0	0	4
	50.0	50.0	0.0	0.0	
	10.5	25.0	0.0	0.0	
	4.5	4.5	0.0	0.0	9.1
WEDNESDAY	1	0	1	0	2
	50.0	0.0	50.0	0.0	
	5.3	0.0	50.0	0.0	
	2.3	0.0	2.3	0.0	4.5
THURSDAY	6	2	0	0	8
	75.0	25.0	0.0	0.0	
	31.6	25.0	0.0	0.0	
	13.6	4.5	0.0	0.0	18.2
FRIDAY	8	0	0	3	11
	72.7	0.0	0.0	27.3	
	42.1	0.0	0.0	20.0	
	18.2	0.0	0.0	6.8	25.0
SATURDAY	0	1	1	1	3
	0.0	33.3	33.3	33.3	
	0.0	12.5	50.0	6.7	
	0.0	2.3	2.3	2.3	6.8
SUNDAY	1	2	0	1	4
	25.0	50.0	0.0	25.0	
	5.3	25.0	0.0	6.7	
	2.3	4.5	0.0	2.3	9.1
OTHER	0	0	0	10	10
	0.0	0.0	0.0	100.0	
	0.0	0.0	0.0	66.7	
	0.0	0.0	0.0	22.7	22.7
TOTALS	19	8	2	15	44
	43.2	18.2	4.5	34.1	100.0

BREAK AND ENTER ON *HIGH B*
TIME OF DAY VERSUS DAY OF THE WEEK
FROM FEB 01, 1987 TO APR 30, 1987

NUMBER ROW % COLUMN % TOTAL %	07:00 TO 17:59	18:00 TO 23:59	24:00 TO 06:59	OTHER	TOTALS
MONDAY	1	0	1	1	3
	33.3	0.0	33.3	33.3	
	6.7	0.0	20.0	8.3	
	2.7	0.0	2.7	2.7	8.1
TUESDAY	3	1	0	0	4
	75.0	25.0	0.0	0.0	
	20.0	20.0	0.0	0.0	
	8.1	2.7	0.0	0.0	10.8
WEDNESDAY	0	1	0	1	2
	0.0	50.0	0.0	50.0	
	0.0	20.0	0.0	8.3	
	0.0	2.7	0.0	2.7	5.4
THURSDAY	3	0	0	1	5
	60.0	0.0	0.0	20.0	
	20.0	0.0	0.0	8.3	
	8.1	0.0	0.0	2.7	13.5
FRIDAY	4	1	1	1	7
	57.1	14.3	14.3	14.3	
	26.7	20.0	20.0	8.3	
	10.8	2.7	2.7	2.7	18.9
SATURDAY	2	1	0	0	3
	66.7	33.3	0.0	0.0	
	13.3	20.0	0.0	0.0	
	5.4	2.7	0.0	0.0	8.1
SUNDAY	1	1	3	0	5
	20.0	20.0	60.0	0.0	
	6.7	20.0	60.0	0.0	
	2.7	2.7	8.1	0.0	13.5
OTHER	0	0	0	9	9
	0.0	0.0	0.0	100.0	
	0.0	0.0	0.0	56.3	
	0.0	0.0	0.0	24.3	24.3
TOTALS	15	5	5	12	37
	40.5	13.5	13.5	32.4	100.0

MEAL AND TIMES IN HIGH C
TIME OF DAY VERSUS DAY OF THE WEEK
FROM FEB 01, 1987 TO APR 30, 1987

DOUBLE COUNT % / COLUMN % / TOTAL %	07:00 - 10:00	10:00 - 13:00	13:00 - 16:00	OTHER	TOTALS
MONDAY	2 66.7 18.2 6.5	1 33.3 20.0 3.2	0 0.0 0.0 0.0	0 0.0 0.0 0.0	3 9.7
TUESDAY	5 100.0 45.5 16.1	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	5 16.1
WEDNESDAY	1 20.0 9.1 3.2	1 20.0 20.0 3.2	3 60.0 75.0 9.7	0 0.0 0.0 0.0	5 16.1
THURSDAY	1 20.0 9.1 3.2	1 20.0 20.0 3.2	0 0.0 0.0 0.0	3 60.0 27.3 9.7	5 16.1
FRIDAY	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	1 100.0 9.1 3.2	1 3.2
SATURDAY	0 0.0 0.0 0.0	1 100.0 20.0 3.2	0 0.0 0.0 0.0	0 0.0 0.0 0.0	1 3.2
SUNDAY	0 0.0 0.0 0.0	1 33.3 20.0 3.2	1 33.3 25.0 3.2	1 33.3 9.1 3.2	3 9.7
OTHER	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	8 100.0 72.7 25.8	8 25.8
TOTALS	11 35.5	5 16.1	4 12.9	11 35.5	31 100.0

BREAK AND ENTER IN HIGH A
TIME OF DAY VERSUS PORTION OF THE WEEK
FROM JAN 01, 1987 TO APR 30, 1987

WHOLE KOD % / COLUMN % / TOTAL %	07:00 TO 13:00	13:00 TO 24:00	24:00 TO 06:59	OTHER	TOTALS
WEEKDAY	13	5	1	2	26
	50.0	19.2	3.8	7.7	
	81.3	62.5	50.0	13.3	
	29.5	11.4	2.3	4.5	59.1
WEEKEND	1	3	1	4	9
	11.1	33.3	11.1	44.4	
	6.3	37.5	50.0	26.7	
	2.3	6.8	2.3	9.1	20.5
OTHER	0	0	0	9	9
	0.0	0.0	0.0	100.0	
	0.0	0.0	0.0	60.0	
	0.0	0.0	0.0	20.5	20.5
TOTALS	16	8	2	15	44
	36.4	18.2	4.5	34.1	100.0

WEEKDAY IS FROM 07:00 MONDAY TO 17:59 FRIDAY
WEEKEND IS FROM 18:00 FRIDAY TO 2259 SUNDAY

BREAK AND ENTER ED HIGH 8
TIME OF DAY VERSUS PORTION OF THE WEEK
FROM SEP 01, 1987 TO AUG 30, 1987

[illegible]	[illegible]	13:00	[illegible]:00		
[illegible]	10	TO	TO		
[illegible]	[illegible]:59	[illegible]:59	06:59	OTHER	TOTALS
[illegible]	4	2	2	6	22
	18.2	9.1	9.1	27.3	
	[illegible]	40.0	40.0	50.0	
	[illegible]	5.4	5.4	16.2	59.5
[illegible]	3	3	3	3	12
	25.0	25.0	25.0	25.0	
	[illegible]	60.0	60.0	25.0	
	[illegible]	8.1	8.1	8.1	32.4
OTHER	0	0	0	3	3
	0.0	0.0	0.0	100.0	
	[illegible]	0.0	0.0	25.0	
	[illegible]	0.0	0.0	8.1	8.1
TOTALS	15	5	5	12	37
	40.5	13.5	13.5	32.4	100.0

[illegible]DAY IS [illegible]:00 MONDAY TO 17:59 FRIDAY
[illegible]END IS [illegible]:00 FRIDAY TO 2059 SUNDAY

CRIME AND TIMES IN HIGH C
TIME OF DAY VERSUS PORTION OF THE WEEK
FROM FEB 01, 1987 TO APR 30, 1987

00001					
1001 %		10300	21000		
COLUMN %	TO	TO	TO		
TOTAL %	10259	20459	06959	OTHER	TOTALS
[illegible]	11	3	3	3	20
	55.0	15.0	15.0	15.0	
	100.0	60.0	75.0	27.3	
	[illegible]	9.7	9.7	9.7	64.5
[illegible]	3	2	1	4	7
	42.9	28.6	14.3	57.1	
	27.3	40.0	25.0	36.4	
	[illegible]	[illegible]	3.2	12.9	22.5
OTHER	0	0	0	4	4
	0.0	0.0	0.0	100.0	
	0.0	0.0	0.0	36.4	
	0.0	0.0	0.0	12.9	12.9
TOTAL	11	5	4	11	31
	35.5	16.1	12.9	35.5	100.0

[illegible] IS FROM 00300 MONDAY TO 17: 7 FRIDAY
[illegible] IS FROM 19300 FRIDAY TO 235 / SUNDAY

APPENDIX I

HIGH A

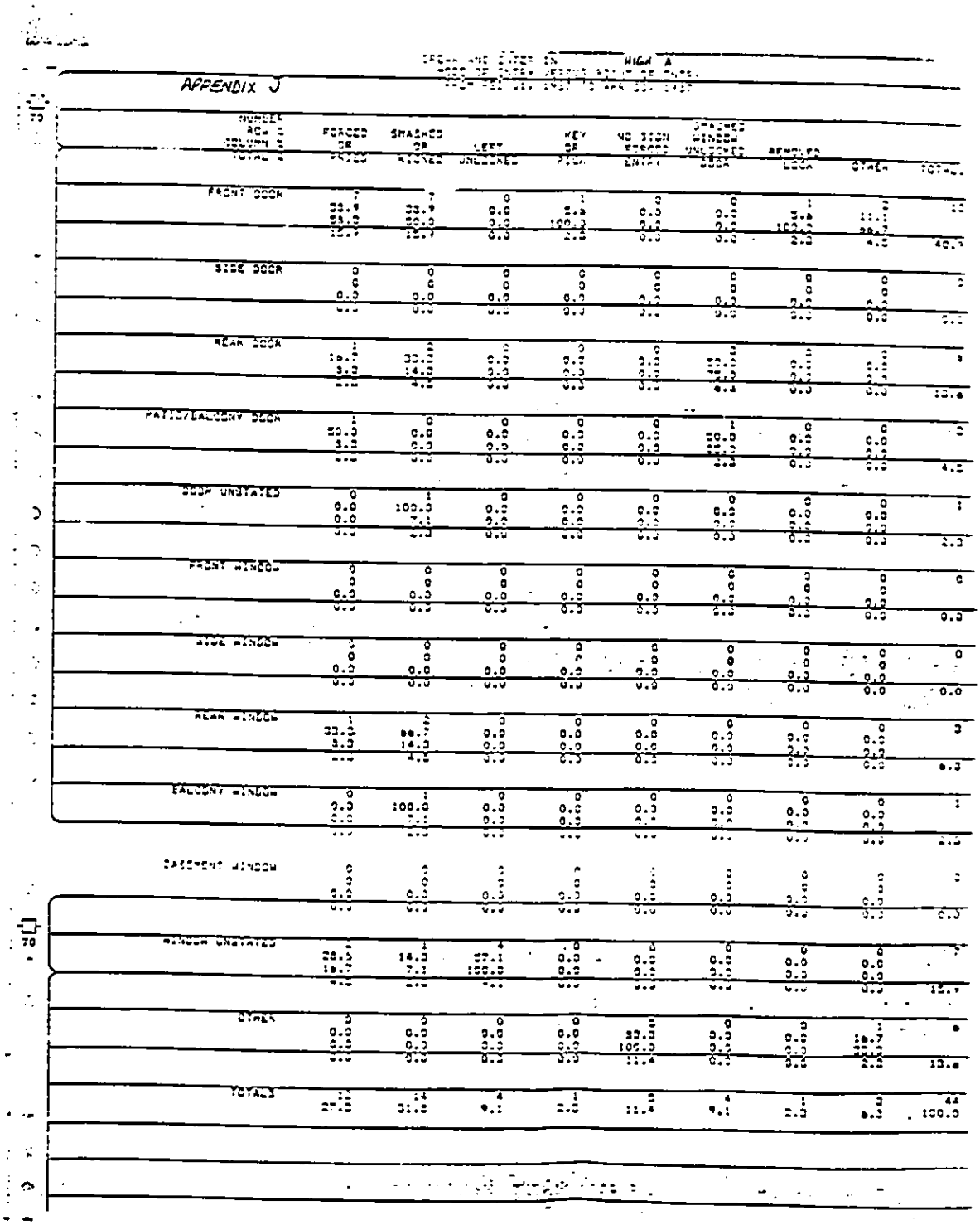
	FRONT DOOR	SIDE DOOR	REAR DOOR	PATIO/ BALCONY DOOR	DOOR UNSTATED	FRONT WINDOW	SIDE WINDOW	REAR WINDOW	BALCONY WINDOW	EASEMENT WINDOW	WINDOW UNSTATED	OTHER	TOTALS
SINGLE FAMILY DWELLING	3 21.4 14.3 7.9	0 0.0 0.0 0.0	5 35.7 71.4 11.4	0 0.0 0.0 0.0	1 7.1 100.0 2.3	0 0.0 0.0 0.0	0 0.0 0.0 0.0	3 21.4 100.0 6.8	0 0.0 0.0 0.0	0 0.0 0.0 0.0	2 14.3 28.6 4.5	0 0.0 0.0 0.0	14 31.8
LOW RISE APARTMENTS	3 42.9 14.3 7.9	0 0.0 0.0 0.0	0 0.0 0.0 0.0	1 14.3 50.0 2.3	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	2 28.6 28.6 4.5	1 14.3 100.0 2.3	7 15.9
HIGH RISE APARTMENTS	1 5.3 04.7 2.6	0 0.0 0.0 0.0	1 5.3 14.3 2.3	1 5.3 50.0 2.3	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	1 4.3 100.0 2.3	0 0.0 0.0 0.0	3 13.0 42.9 6.8	5 21.7 83.3 11.4	23 52.3
TOWNHOUSE	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0
ROWHOUSE	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0
OTHER	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0
TOTALS	19 20.9	0 0.0	16 17.6	2 2.2	1 1.1	0 0.0	0 0.0	3 3.3	1 1.1	0 0.0	7 7.7	6 6.6	91 100.0

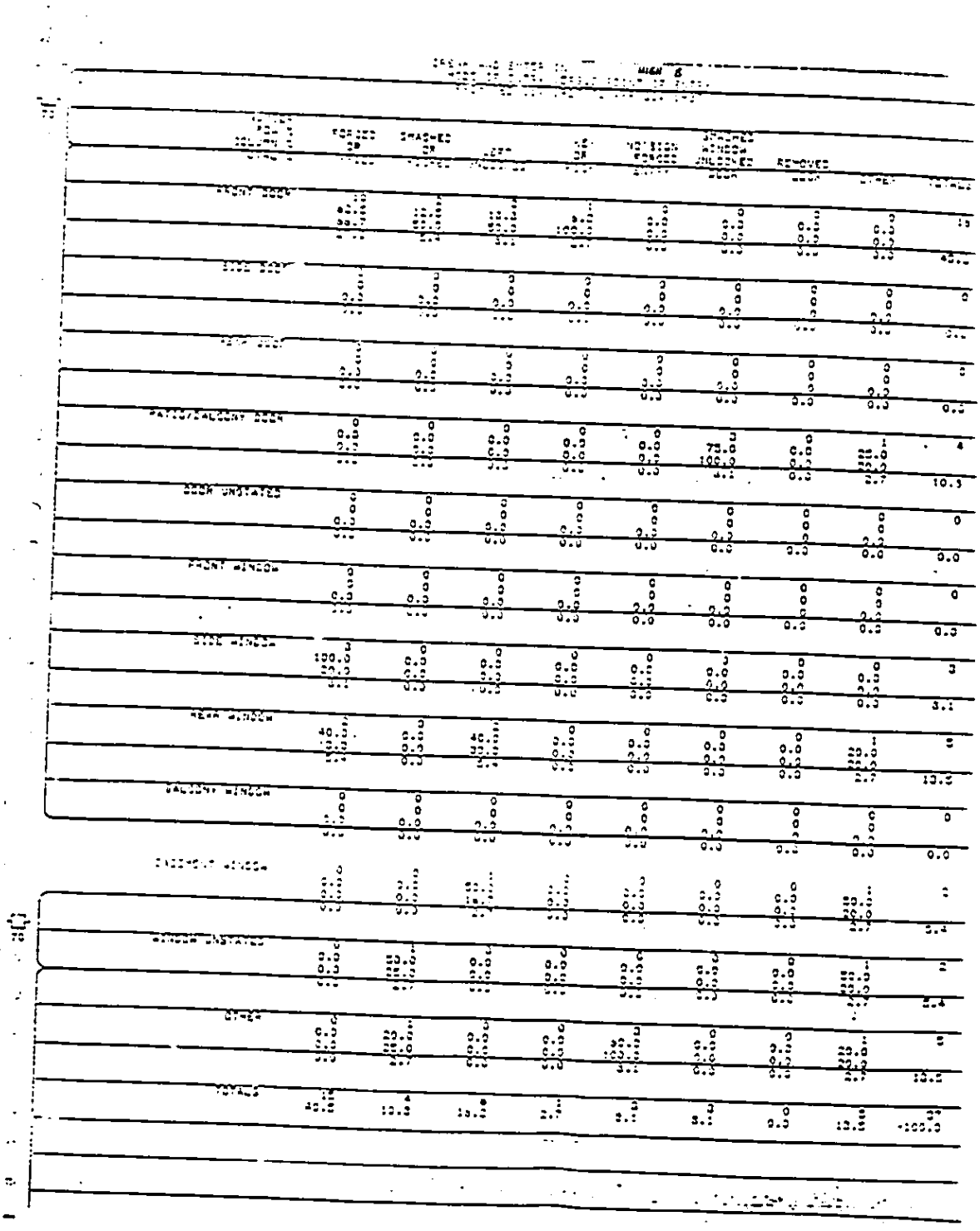
BREAK AND ENTER IN — HIGH 6
POINT OF ENTRY VERSUS TYPE OF STRUCTURE
FROM FEB 01, 1987 TO APR 30, 1987

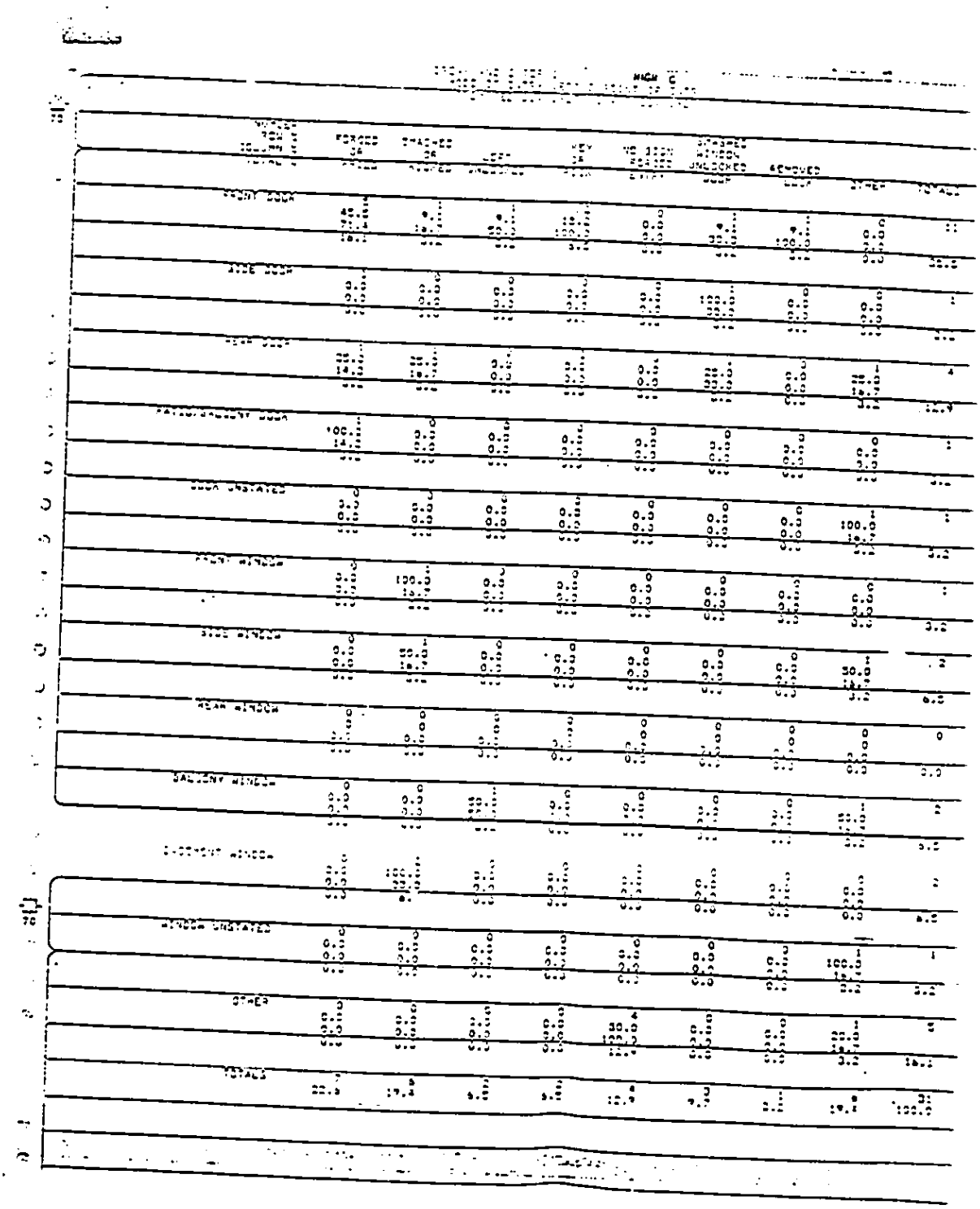
NUMBER ROW % COLUMN % TOTAL %	FRONT DOOR	SIDE DOOR	REAR DOOR	PATIO/ BALCONY DOOR	DOOR UNSTATED	FRONT WINDOW	SIDE WINDOW	REAR WINDOW	BALCONY WINDOW	BASEMENT WINDOW	WINDOW UNSTATED	OTHER	TOTALS
SINGLE FAMILY DWELLING	0	0	0	3	0	0	0	2	0	1	0	0	6
	0.0	0.0	0.0	50.0	0.0	0.0	0.0	33.3	0.0	16.7	0.0	0.0	
	0.0	0.0	0.0	75.0	0.0	0.0	0.0	40.0	0.0	50.0	0.0	0.0	
	0.0	0.0	0.0	8.1	0.0	0.0	0.0	5.4	0.0	2.7	0.0	0.0	16.2
LOW-RISE APARTMENTS	1	0	0	0	0	0	0	0	0	0	2	1	4
	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	25.0	
	6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	20.0	
	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.4	2.7	10.8
HIGH-RISE APARTMENTS	15	0	6	0	0	0	3	0	0	0	0	4	22
	68.2	0.0	0.0	0.0	0.0	0.0	13.6	0.0	0.0	0.0	0.0	18.2	
	93.8	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	80.0	
	40.5	0.0	0.0	0.0	0.0	0.0	8.1	0.0	0.0	0.0	0.0	10.8	59.5
TOWNHOUSE	0	0	0	1	0	0	0	2	0	0	0	0	3
	0.0	0.0	0.0	33.3	0.0	0.0	0.0	66.7	0.0	0.0	0.0	0.0	
	0.0	0.0	0.0	25.0	0.0	0.0	0.0	40.0	0.0	0.0	0.0	0.0	
	0.0	0.0	0.0	2.7	0.0	0.0	0.0	5.4	0.0	0.0	0.0	0.0	8.1
ROWHOUSE	0	0	0	0	0	0	0	1	0	1	0	0	2
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	50.0	0.0	0.0	
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	50.0	0.0	0.0	
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	2.7	0.0	0.0	5.4
OTHER	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTALS	16	0	6	4	0	0	3	5	0	2	2	5	37
	13.2	0.0	0.0	10.8	0.0	0.0	8.1	13.5	0.0	5.4	5.4	13.5	100.0

FILE AND ENTER IN **HIGH C**
POINT OF ENTRY VERSUS TYPE OF STRUCTURE
FROM SEP 01, 1987 TO APR 30, 1987

NUMBER ROW % COLUMN % TOTAL %	FRONT DOOR	SIDE DOOR	REAR DOOR	FRONT BALCONY DOOR	DOOR UNSTATED	FRONT WINDOW	SIDE WINDOW	REAR WINDOW	BALCONY WINDOW	BASEMENT WINDOW	WINDOW UNSTATED	OTHER	TOTALS
SINGLE FAMILY DWELLING	2 22.2 18.2 6.5	0 0.0 0.0 0.0	3 33.3 75.0 9.7	1 11.1 100.0 3.2	0 0.0 0.0 0.0	1 11.1 100.0 3.2	1 11.1 50.0 3.2	0 0.0 0.0 0.0	1 11.1 50.0 3.2	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	9 29.0
LOW-RISE APARTMENTS	2 22.2 18.2 6.5	1 11.1 100.0 3.2	0 0.0 0.0 0.0	0 0.0 0.0 0.0	1 11.1 100.0 3.2	0 0.0 0.0 0.0	1 11.1 50.0 3.2	0 0.0 0.0 0.0	0 0.0 0.0 0.0	2 22.2 100.0 6.5	0 0.0 0.0 0.0	1 11.1 20.0 3.2	9 29.0
HIGH-RISE APARTMENTS	5 50.0 45.5 16.1	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	1 10.0 50.0 3.2	0 0.0 0.0 0.0	1 10.0 100.0 3.2	3 30.0 60.0 9.7	10 32.3
TOWNHOUSE	2 66.7 18.2 6.5	0 0.0 0.0 0.0	1 33.3 25.0 3.2	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	3 9.7
ROWHOUSE	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0.0
OTHER	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0.0
TOTALS	11 35.5	1 3.2	4 12.9	1 3.2	1 3.2	1 3.2	2 6.5	0 0.0	2 6.5	2 6.5	1 3.2	5 16.1	31 100.0







APPENDIX K

BREAK AND ENTER IN HIGH A
MODE OF ENTRY VERSUS TYPE OF STRUCTURE
FROM FEB 01, 1987 TO APR 30, 1987

NUMBER ROW % COLUMN % TOTAL %	FORCED OR PRIED	SMASHED OR KICKED	LEFT UNLOCKED	KEY OR PICK	NO SIGN FORCED ENTRY	SMASHED WINDOW UNLOCKED DOOR	REMOVED LOCK	OTHER	TOTALS
SINGLE FAMILY DWELLING	6 42.9 50.0 13.6	4 28.6 28.6 9.1	1 7.1 25.0 2.3	0 0.0 0.0 0.0	0 0.0 0.0 0.0	3 21.4 75.0 6.8	0 0.0 0.0 0.0	0 0.0 0.0 0.0	14 31.8
LOW-RISE APARTMENTS	0 0.0 0.0 0.0	3 42.9 21.4 6.8	2 28.6 50.0 4.5	0 0.0 0.0 0.0	0 0.0 0.0 0.0	1 14.3 25.0 2.3	0 0.0 0.0 0.0	1 14.3 33.3 2.3	7 15.9
HIGH-RISE APARTMENTS	6 26.1 50.0 13.6	7 30.4 50.0 15.9	1 4.3 25.0 2.3	1 4.3 100.0 2.3	5 21.7 100.0 11.4	0 0.0 0.0 0.0	1 4.3 100.0 2.3	2 8.7 66.7 4.5	23 52.3
TOWNHOUSE	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0.0
ROWHOUSE	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0.0
OTHER	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0.0
TOTALS	12 27.3	14 31.8	4 9.1	1 2.3	5 11.4	4 9.1	1 2.3	3 6.8	44 100.0

BREAK AND ENTER IN HIGH 8
MODE OF ENTRY VERSUS TYPE OF STRUCTURE
FROM FEB 01, 1987 TO APR 30, 1987

NUMBER ROW % COLUMN % TOTAL %	FORCED OR PRIED	SMASHED OR KICKED	LEFT UNLOCKED	KEY OR PICK	NO SIGN FORCED ENTRY	SMASHED WINDOW UNLOCKED DOOR	REMOVED LOCK	OTHER	TOTALS
SINGLE FAMILY DWELLING	1 16.7 6.7 2.7	0 0.0 0.0 0.0	1 16.7 16.7 2.7	0 0.0 0.0 0.0	0 0.0 0.0 0.0	2 33.3 66.7 5.4	0 0.0 0.0 0.0	2 33.3 40.0 5.4	6 16.2
LOW-RISE APARTMENTS	0 0.0 0.0 0.0	2 50.0 50.0 5.4	0 0.0 0.0 0.0	0 0.0 0.0 0.0	1 25.0 33.3 2.7	0 0.0 0.0 0.0	0 0.0 0.0 0.0	1 25.0 20.0 2.7	4 10.8
HIGH-RISE APARTMENTS	13 59.1 86.7 35.1	2 9.1 50.0 5.4	3 13.6 50.0 8.1	1 4.5 100.0 2.7	2 9.1 66.7 5.4	0 0.0 0.0 0.0	0 0.0 0.0 0.0	1 4.5 20.0 2.7	22 59.5
TOWNHOUSE	1 33.3 6.7 2.7	0 0.0 0.0 0.0	1 33.3 16.7 2.7	0 0.0 0.0 0.0	0 0.0 0.0 0.0	1 33.3 33.3 2.7	0 0.0 0.0 0.0	0 0.0 0.0 0.0	3 8.1
BUNGHOUSE	0 0.0 0.0 0.0	0 0.0 0.0 0.0	1 50.0 16.7 2.7	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	1 50.0 20.0 2.7	2 5.4
OTHER	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0.0
TOTALS	15 40.5	4 10.8	6 16.2	1 2.7	3 8.1	3 8.1	0 0.0	5 13.5	37 100.0

BREAK AND ENTER IN HIGH C
MODE OF ENTRY VERSUS TYPE OF STRUCTURE
FROM FEB 01, 1987 TO APR 30, 1987

NUMBER ROW % COLUMN % TOTAL %	FORCED OR PRIED	SMASHED OR KICKED	LEFT UNLOCKED	KEY OR PICK	NO SIGN FORCED ENTRY	SMASHED WINDOW UNLOCKED DOOR	REMOVED LOCK	OTHER	TOTALS
SINGLE FAMILY DWELLING	1 11.1 14.3 3.2	2 22.2 33.3 6.5	1 11.1 50.0 3.2	0 0.0 0.0 0.0	0 0.0 0.0 0.0	2 22.2 66.7 6.5	0 0.0 0.0 0.0	3 33.3 50.0 9.7	9 29.0
LOW-RISE APARTMENTS	2 22.2 28.6 6.5	3 33.3 50.0 9.7	0 0.0 0.0 0.0	0 0.0 0.0 0.0	1 11.1 25.0 3.2	1 11.1 33.3 3.2	0 0.0 0.0 0.0	2 22.2 33.3 6.5	9 29.0
HIGH-RISE APARTMENTS	2 20.0 28.6 6.5	0 0.0 0.0 0.0	1 10.0 50.0 3.2	2 20.0 100.0 6.5	3 30.0 75.0 9.7	0 0.0 0.0 0.0	1 10.0 100.0 3.2	1 10.0 16.7 3.2	10 32.3
TOWNHOUSE	2 66.7 28.6 6.5	1 33.3 16.7 3.2	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	3 9.7
ROWHOUSE	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0.0
OTHER	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0 0.0 0.0	0 0.0
TOTALS	7 22.6	6 19.4	2 6.5	2 6.5	4 12.9	3 9.7	1 3.2	6 19.4	31 100.0

APPENDIX L

The following is a list of terms used throughout this thesis as defined by Statistics Canada in the 1981 Census of Canada.

Age - Refers to age at last birthday (as of the census reference date, June 3, 1981). This variable is derived from date of birth.

Average Income - The average family/household income refers to the weighted mean total income of families/households in 1980. Average income is calculated from unrounded data by dividing the aggregate income of a group of families/households by the number of families/households in that group.

Census Family - Refers to a husband and wife (with or without children who have never been married, regardless of age), or a lone parent of any marital status, with one or more children who have never married, regardless of age, living in the same dwelling. For census purposes, persons living in a common-law type of arrangement are considered as now married.

Census Family Status - Refers to the classification of the population into family and non-family persons.

Family persons refers to household members who belong to a census family.

Non-family persons refers to household members who do not belong to a census family. They may be related to the household reference person or unrelated. A person living alone is always a non-family person.

Census Family Structure - Refers to the classification of census families into husband-wife families and lone-parent families by sex of parent.

Family/Household Total Income - The total income of a census family or household is the sum of the total incomes of the members of that family or household.

Incidence of Low Income - On the basis of the total income of a family unit adjusted for federal Child Tax Credit, size of the family unit and size of the area of residence, the position of each unattached individual and economic

family is determined in the relation to low income cut-offs based on the 1978 Family Expenditure Survey and updated by changes in the Consumer Price Index. The incidence of low income is the percentage of units below the low income cut-offs. The incidence rates in this report have been calculated from unrounded data.

Labour Force Activity - Refers to the labour market activity of the population 15 years of age and over, excluding inmates, who, in the week prior to enumeration (June 3, 1981) were Employed, Unemployed, or Not in labour force.

Occupied Private Dwelling - Refers to a private dwelling in which a person or group of persons is permanently residing. Also included are private dwellings whose usual residents are temporarily absent on Census Day. Unless otherwise specified, all data in housing reports are for occupied private dwellings rather than unoccupied private dwellings or dwellings occupied solely by foreign and/or temporary residents.

Owner's Major Payments/Gross Rent as a Percentage of Household Income - Refers to the proportion of average monthly 1980 Household Total Income spent on Owner's Major Payments/Gross Rent. Data for this variable are for private households in owner-tenant occupied non-farm dwellings, excluding owner/tenant households who reported a loss in their total household income, or had no income in 1980.

Owner-Occupied Private Non-farm Dwelling - Refers to a private dwelling, other than one situated on a farm and occupied by a farm operator, which is owned or being bought by some member of the household.

Population Density - Refers to the number of persons per square kilometre.

Private Household - Refers to a person or group of persons (other than foreign residents) who occupy a private dwelling and do not have a usual place of residence elsewhere in Canada. The number of private households equals the number of private occupied dwellings.

Structural Type - Refers to the structural arrangements of the dwelling.

Single House (Single Detached) - Refers to a single dwelling not attached to any other building and surrounded on all sides by open space.

Semi-detached or Double House - Refers to one of two dwellings attached side by side but not attached to any other building and surrounded on all other sides by open space.

Duplex - Refers to one of two dwellings, one above the other, not attached to any other building and surrounded on all sides by open space.

Row House - Refers to one of three or more dwellings joined side by side but not having any other dwellings either above or below.

Apartment in a Building That Has Five or More Storeys - Refers to a dwelling unit in a high-rise apartment building.

Apartment in a Building That Has Less Than Five Storeys - Refers to a dwelling unit in a triplex, quadruplex or a dwelling unit in a non-residential building or in a house that has been converted.

Value of Dwelling - Refers to the amount expected by the owner if the dwelling were to be sold.