Northern Territory Gambling Prevalence Survey 2005

October 2006

Charles Darwin
UNIVERSITY

**School for Social and Policy Research
& School of Health Sciences**

COMMUNITY BENEFIT FUND
Helping Build Better Communities

Northern Territory Gambling Prevalence Survey 2005

October 2006

School for Social and Policy Research & School of Health Sciences

Preface

This report presents the results of the first prevalence survey of gambling and problem gambling in the NT, conducted during August and September of 2005. Its purpose is to inform policy makers, industry, and the community at large about the nature and impacts of gambling in the NT. As such it is a baseline study which seeks not only to describe current patterns, but also to act as the cornerstone on which a future gambling research agenda may be constructed. The timing of the report is particularly relevant as it charts the NT gambling landscape exactly 10 years after the first poker machines were introduced into hotels and clubs.

This report is specifically concerned with the prevalence of gambling and problem gambling in the NT. It focuses explicitly on the results of the prevalence survey along with a detailed socio-spatial analysis of trends in poker machine gambling over the past decade.

The Research Team

Dr Martin Young (Chief Investigator), Research Fellow (SSPR)
Associate Professor Ibtisam Abu-Duhou, Principal Research Fellow (SSPR)
Professor Tony Barnes, Professorial Research Fellow (SSPR)
Ms Elizabeth Creed, Research Fellow (casual) (SSPR)
Dr Mary Morris, Head of School (SHS)
Mr Matthew Stevens, Research Fellow (SSPR)
Dr Bill Tyler, Adjunct Senior Research Fellow (SSPR)

Prevalence Advisory Group

Dr Ian Crundall, Director, Racing, Gaming & Licensing Policy, NT Treasury
Mr Bernie Dwyer, Director, Amity House
Ms Sally Fielke, CEO, Australian Hotels Association (NT)
Mr Michael Lucas, General Manager, Lasseters Hotel & Casino
Mr Andrew Wilson, General Manager, Sky City Casino
Mr Andrew Haye, President, NT Clubs
Mr Garry Scapin, Department of Health and Community Services

Contents

List of Figures

Executive Summary

Gambling Participation

A telephone survey of a sample of 1,873 NT residents was conducted in August–September 2005 to study participation in and attitudes towards gambling. The survey closely followed the approach of a previous major national survey conducted by the Productivity Commission in 1999 and achieved a broadly comparable response rate of 37%.

The telephone survey revealed that 73% of adult residents of the NT participated in at least one gambling activity in the 12-month period preceding the survey (if raffles are included this figure rises to 85%).

Playing lotto or another lottery game had the highest participation rate (52.8% of the adult population). The next most frequent gambling activities were: buying instant scratch tickets (28.6%); playing poker machines (27.0%); playing keno (22.6%); and betting on horse or greyhound races (19.0%).

NT participation rates are generally lower than the Australian average measured in the same way by the Productivity Commission in 1999. In fact, NT residents only participated in one activity, keno, more than all Australians in 1999.

Participation and frequency of gambling by adult for Australia 1999 and the NT 2005[2]

Gambling activity	Total participation (%)	
	Australia 1999	NT 2005
Played lotto or other lottery game	60	53
Bought instant scratch tickets	46	29
Played poker or gaming machines	39	27
Bet on horse or greyhound races	24	19
Played keno at club / hotel / casino / other	16	23
Played table games at a casino	10	10
Bet on a sporting event	6	5
Played bingo at a club or hall	5	2
Played games privately for money	5	4
Played an Internet casino game	0.4	0.6
Any gambling activity	82	73

Source: 1999 PC National Gambling Survey and 2005 NT Gambling Prevalence Survey.

The major centres of Darwin and Alice Springs (77.4% and 70.7% respectively) did not display the highest participation levels, which may be surprising, given they had the greatest available range of gambling opportunities including the Territory's two casinos. In the NT the highest gambling participation was in Tennant Creek/ Nhulunbuy (80.1%). The lowest participation was in the Rest of the NT (65.1%).

The NT population is composed of between 7.0% and 8.0% regular gamblers (i.e. individuals who gambled at least once a week on activities other than lottery games or instant scratch tickets); between 64.0% and 67.0% non-regular gamblers (i.e. individuals who gambled in any single gambling activity, apart from lottery games or instant scratch tickets, less than weekly); and between 25.6% and 28.3% non-gamblers.

Regular gamblers were o*ver-represented* within:

- the over 55 years age group
- males
- group households
- retirees
- those educated to secondary level
- households with an income over $80,000 p.a.

Regular gamblers *were under-represented* within:

- the 35 to 44 year old age group
- females
- those with some university education
- people in part-time employment
- couples with children
- households with an income less than $20,000 p.a.

Non-regular gamblers were *over-represented* within:

- people who are unemployed or looking for work
- households that earned less than $20,000 and households that earned between $80,000 and $100,000
- one-parent families with children.

Non-regular gamblers were *under-represented* within:

- self-supporting retirees
- group households.

Non-gamblers were *over-represented* within:

- group households
- those with some university education
- people born overseas.

Non-gamblers were *under-represented* within:

- households that earned between $20,000 and $39,999 p.a. and above $80,000 p.a.
- couples with no children
- those with primary and secondary education
- unemployed or looking for work.

Prevalence of Problem Gambling

Problem gambling was measured using the South Oaks Gambling Screen (SOGS) and the Canadian Problem Gambling Index (CPGI).

The prevalence of problem gambling in the NT, as defined by the SOGS 5+ threshold, is 1.06% with a 95% confidence interval of between 0.73% and 1.43%. This means that, as measured by the SOGS, the NT has an estimated 1,465 problem gamblers with a lower bound of about 1,000 and an upper bound of about 2,000.

The prevalence of gamblers with severe problems, as defined by the SOGS10+ threshold, was 0.23% with a 95% confidence interval of between 0.07% and 0.37%. This translates to 318 adult residents with severe gambling problems with a lower bound of about 100 and an upper bound of about 500.

The CPGI 8+ provided a lower estimate of problem gambling at 0.64% of the NT population with a 95% confidence interval of between 0.40% and 0.88%. This translates to an estimated 885 problem gamblers with an approximate lower bound of 650 and an approximate upper bound of 1,050.

These prevalence estimates, when compared to previous estimates by national and interstate studies, rank the NT on a par with Queensland, with proportionately fewer problem gamblers than NSW, Victoria, and the ACT, but more than Tasmania and WA.

Within the NT problem gambling is more prevalent in the larger urban centres. Alice Springs had the highest prevalence of problem gambling (between 0.35–2.81%), followed by Darwin (between 0.66–1.44%), Katherine (between 0.00–1.56%), Tennant Creek/Nhulunbuy (between 0.17–2.01), and the Rest of the NT between 0.00–0.91%).

In terms of their representation within particular socio-demographic groups in the NT population:

Problem gamblers (SOGS 5+) were *over-represented* within:
- those from a non-English speaking background
- households with an income of less than $20,000 pa.
- the Indigenous population
- those educated with some primary or secondary schooling.

Problem gamblers (SOGS 5+) were *under-represented* within:
- households with an income from $80,000 to $99,999
- those educated to tertiary level
- people working part time.

Multivariate analysis identified four statistically significant risk factors for problem gambling (SOGS5+). These risk factors for problem gamblers included:
- high annual household income of $100,000 or more
- low levels of formal education (secondary school or less)

- identification as an Indigenous person
- main household language other than English

A different picture of the problem gambler is painted if the analysis is based on the CPGI instead of the SOGS. The social characteristics of the problem gambler defined on the basis of the CPGI are listed below.

Problem gamblers (CPGI 8+) were *over-represented* within:
- households with an income of less than $20,000 p.a.
- group households.

Problem gamblers (CPGI 8+) were *under-represented* within:
- the 25–34 year old age group
- households with an income of $60,000 to $79,999 p.a.
- couples with no children
- those educated to tertiary level or higher (i.e. some university).

Both the SOGS and CPGI profiles found that problem gamblers were over-represented in low household income groups (incomes below $20,000 p.a.) and both found an association between low formal educational achievement and problem gambling (or conversely high educational achievement and reduced problem gambling). These variables, although general, appear to be fundamental influences on problem gambling.

Non-English speaking background and Indigenous identity were not picked up by the CPGI because the CPGI categorises a slightly different group of gamblers. The screens are not absolute or discrete definitions and neither definition is 'correct'. More research is required to further test these screens in the NT context to decide which is the most appropriate.

Self-reported Gambling Expenditure

The self-reported expenditure data indicate the NT population spends a greater proportion of its gambling dollars (35%) on playing poker or gaming machines than on any other gambling activity. Betting on horse or greyhound racing accounts for one-quarter (23%) of the community's gambling expenditure. Playing table games at a casino and sports betting accounted for 10% and 12% respectively of total perceived gambling expenditure. The remaining gambling activities accounted for almost one-fifth of total expenditure.

Regular gamblers, who comprise between 7% and 8% of the adult population (and who as a group incorporate problem gamblers) account for 75.5% of total gambling expenditure. On a per capita basis this equates to an estimated average self-reported annual expenditure of $11,183.

Problem gamblers (SOGS5+), who comprise an estimated 1.1% of the adult population, were responsible for an estimated 31.3% of total gambling expenditure. This equates to an estimated average annual self-reported loss of $30,913, which, given the likelihood of under-reporting, should be interpreted as a probable underestimate of the true gambling losses for this group.

Comparisons of self-reported expenditure with government records of player loss data suggest that the self-reported expenditure may underestimate average player losses by a factor of about two.

Problem gamblers (SOGS5+) also reported spending more per capita on all forms of gambling except for betting on a sporting event. They accounted for 68% of expenditure on playing games privately for money, 42% of total expenditure on poker machines, 37% of total expenditure on playing casino table games, and 25% of total racing expenditure.

Poker Machines in Community Venues

Total player loss on poker machines over the past decade has increased by approximately $10 million per year. Casino based gaming machines appear to have reached a plateau in the average annual takings of about $80,000 per machine, although total casino takings for poker machines has been increasing because of increasing machine numbers. In hotels and clubs, average machine takings are lower (about $50,000 in 2005) but still increasing. Higher average machine yields were found in the established Darwin and Palmerston region rather than the remote centres.

In contrast to the patterns found in metropolitan jurisdictions by previous research studies, machine concentration in the NT were found in areas of higher rather than lower socio-economic advantage. In other words, there exists a positive association between poker machines numbers and the relative economic affluence of an area.

However, it would be erroneous to conclude that wealthier people play poker machines more than poorer people, or that poker machine allocation does not target lower socio-economic groups. This is because:

- NT venues are likely to have wider catchment areas that disrupt the tighter relationship between location and clientele found in the southern Australian markets, where proximity of gambler to particular venues is more important.
- Poker machines were introduced into an existing spatial structure of establishments, and venue location may very well depend on the existence of a previous facility.
- Venues in the NT are relatively small and have fewer options for spatial mobility of machines.

There is a clear pattern that shows that higher rates of return per machine are associated with higher numbers of machines per venue. This 'concentration effect' occurs both in hotels and in clubs, but is more pronounced in hotels. An extra machine in a hotel will yield several times the equivalent of a club venue.

Because the number of machines is crucial (more machines equal more average revenue) the policy of capping plays an effective central counter-balancing role to the concentration effect. The policy of capping does create unmet demand, particularly in hotels. Therefore most hotels would no doubt profit from an increase in the 10 machine limit. However, increasing this cap, particularly for hotels, would be likely to produce a regressive effect due to the likely clientele characteristics and location of hotels in less affluent areas. More research on the clientele and patronage

of hotels and clubs is necessary before the exact consequences of changing the capped limits may be estimated.

Community Attitudes

A significant majority of the NT population (70%) disagreed with the statement that gambling does more good than harm. The responses were remarkably similar to the results of the Productivity Commission Survey in 1999, indicating that the majority of the NT population does not agree that gambling is a positive benefit to the community, and that this perception has remained relatively steady over time.

Given that 73% of the population participate in gambling, attitudes towards gambling do not appear to directly influence behaviour for most people. However, behaviour does appear to influence community attitudes. Attitudes were influenced by the level of individual participation in gambling, with more gamblers than non-gamblers likely to perceive gambling as having some benefits for the community.

Community opinion was equally divided about whether the number of poker machines in the community should stay the same or be decreased. The majority of those who supported a decrease favoured a decrease in clubs and hotels.

The perceived drawbacks of poker machines for the community appeared to outweigh the benefits. A substantial proportion (over 40%) of the population felt that people were encouraged to spend more than they could afford on poker machines. Almost one-third of the population was concerned about the issue of people becoming addicted to playing poker machines. There was also some level of concern for people on low or fixed incomes who gambled, and also about how families were affected by gambling.

The perceived benefits were largely associated with the revenue generated by machines. Between 15% and 20% of the population thought that the economic benefits deriving from poker machines were mainly directed towards the industry in the form of increased revenue for venues, while a similar proportion thought machines provided increased taxation revenue for government. Just over 10% thought that money actually returns to local communities. Around 15% of gamblers suggested that poker machines provide entertainment and recreational benefits.

1. Introduction

Gambling is an activity engaged in by a large number of people without adverse consequence. However, for some individuals, gambling can become a destructive activity that causes financial, social and psychological harm. While 'problem gambling' may be defined in many ways, most definitions emphasise lack of control over gambling behaviour along with a range of consequent adverse personal, economic, and social impacts (Productivity Commission 1999). A report commissioned in 2005 by the Ministerial Council on Gambling, titled *Problem Gambling and Harm: Towards a National Definition*, established a definition of problem gambling to be adopted at the national level. It is presented below:

> *Problem gambling is characterized by difficulties in limiting money and/or time spent on gambling which leads to adverse consequences for the gambler, others, or for the community.* (South Australian Centre for Economic Studies and Department of Psychology University of Adelaide 2005a, i)

While it is useful to have a set national definition of problem gambling, of greater importance is the measurement tool used to categorise individuals as problem gamblers. In other words, the methods used to 'screen' problem gamblers from the rest of the population effectively define this group as a distinct entity. Different methods categorise individuals in slightly different ways, resulting in different estimates of the prevalence of problem gambling in any given population. Therefore, the fundamental decision to be made when estimating the level of problem gambling concerns the choice of problem gambling screen.

1.1 Interpretation of Problem Gambling Estimates

Before the methods used to estimate the prevalence of problem gambling in the Northern Territory (NT) are presented, it is necessary to draw attention to several points regarding their interpretation. First, the exact percentage points by which prevalence is expressed may be misleading as they imply an absolute figure when in reality they represent best estimates of prevalence in any given population. As problem gamblers usually constitute a very small percentage of a population, there is an amount of uncertainty attached to the estimate, and its associated standard error must be considered. In other words, rather than understanding problem gambling prevalence as an absolute figure, it is better interpreted as a confidence range, from the lowest to the highest probable percentages. These upper and lower limits should be incorporated into any consideration of the prevalence estimates. Thus, estimates of problem gambling prevalence are presented in this report as a percentage plus or minus the standard error.

Second, given the reluctance of individuals to admit to problem gambling behaviour, it is generally recognized that all gambling screens under-estimate the prevalence of problem gambling. In addition, as problem gambling is relatively uncommon at a population level, it may appear to be an insignificant problem. Such a conclusion would be erroneous. Although the percentage of problem gamblers identified may be small, the actual number of people affected by problem gambling form a sizeable

group of the population. In addition to the problem gamblers themselves, a range of other people are affected directly and indirectly by their behaviour (e.g. family, friends, work colleagues). In this context, the precise figure of a prevalence estimate 'is a nicety' (Banks 2002, 3). Regardless of its actual value, the issue of problem gambling is a significant one requiring effective policy responses.

Third, an estimate of the prevalence of problem gambling at a point in time for a particular population group is of limited value. Much greater value is derived from comparisons with problem gambling rates in different places and at different times. Comparisons can therefore be drawn with other jurisdictions and within the same jurisdiction over time. This may only be achieved if the estimation methods are consistently used. The current project achieved this comparability by replicating the methods used by the Productivity Commission in its 1999 inquiry *Australia's Gambling Industries*, and by following the Ministerial Council's 2005 recommendations for the national measurement of problem gambling. This has enabled the establishment of a definitive benchmark for the NT. This benchmark may be used to compare the NT to other jurisdictions and to track changes over time. Such changes could be related to government policy, social change, or the introduction of new technology.

Fourth, arguably the most pragmatic function of a problem gambling screen is the definition of problem gamblers as a discrete group of individuals. This categorisation enables the characteristics of problem gamblers to be identified and to be contrasted with the characteristics of other gamblers or the population at large. From analyses of these contrasts, the risk factors associated with becoming or being a problem gambler may be identified and appropriate policy responses may be suggested.

1.2 Measurement of Problem Gambling

Problem gambling screens are lists of items, known to be correlated with problem gambling, which are used to classify problem gamblers in a given population (Fisher 1999). The two main screens which have historically been used in gambling research are the South Oaks Gambling Screen (SOGS) (Lesieur and Blume 1987; Lesieur and Blume 1993) and the DSM-IV (Lesieur and Rosenthal 1993; Lesieur 1994). The relative merits of each have been the subject of considerable academic debate (for an overview, see the report by the South Australian Centre for Economic Studies and Department of Psychology University of Adelaide 2005a). Rather than enter into this debate, the research team made a decision to use the screen that had the highest comparative value. In particular, the team wished to compare the results of the current study to national estimates of problem gambling produced by the Productivity Commission's *National Gambling Survey* in 1999. The importance of the comparability of estimates is a point emphasised by the Commission's Chair, Gary Banks, in his retrospective evaluation of the Productivity Commission's report:

> *What does seem important is to apply a given test, around which there is reasonable professional agreement, consistently across jurisdictions and over time. Otherwise there is a danger of creating more confusion than clarity about the extent of problem gambling and, importantly, whether it is actually responding to remedial measures.* (Banks 2002, 3)

Commissioner Banks went on to make the point that most subsequent prevalence surveys at the regional level have made significant changes to the Commission's methods, rendering comparison problematic. To avoid this pitfall, and hence to maximise its value, the current study replicated the Commission's methods as closely as possible.[1] The SOGS was chosen because, not only was it used by the *National Gambling Survey*, it has also been used by nearly all previous prevalence surveys both in Australian and overseas. It therefore possesses the highest comparative value (Battersby, Thomas et al. 2002).

The SOGS is a twenty item scale designed to separate problem gamblers from non-problem gamblers. As it consists of twenty questions requiring yes or no responses, the scores for the SOGS range from 0 to 20. Following the Productivity Commission (1999) the SOGS 5+ threshold is used as the primary definition of problem gamblers in this report, that is, all regular gamblers who scored 5 or more out of 20 were classified as problem gamblers. As the SOGS represents the most widely used benchmark, the threshold of 5 or more is consistently used in this report as the primary definition of problem gambling. However, as problem gambling varies in its severity or intensity, as second measure, a SOGS score of 10+, was also used in some instances to identify gamblers with severe problems (Productivity Commission 1999).

However, during the early stages of the project, some new information came to light in the form of the 2005 report commissioned by the Ministerial Council on Gambling referred to earlier. The report released by the Council not only recommended the national definition of problem gambling, quoted in the opening paragraph of this Chapter, it also recommended a preferred gambling screen for measuring it in future research. This recommendation supported the use of the Canadian Problem Gambling Index (CPGI) as the preferred instrument for population level research in Australia, a tool that had specifically been developed for population-based prevalence estimates in contrast to the clinical setting within which the SOGS was developed (Ferris and Wynne 2001). The CPGI is relatively simple compared with the SOGS, consisting of just nine items that are scored from 0 to 3. It was therefore possible to include it within the present telephone survey in addition to the SOGS. This has the dual advantages of enabling the NT results derived from the present study to be compared with previous Australian studies (by means of the Productivity Commission Report) and overseas studies which have been conducted using the SOGS. In addition, through the CPGI measure, the current results will be directly comparable to future Australian studies which use the agreed national measure of problem gambling. Using both these measures also enables a comparison of the two tools in the assessment of problem gambling. However, for purposes of consistency through this report, and for direct comparative purposes with the Productivity Commission, problem gamblers are referred to as those individuals who were identified by the SOGS instrument. This identification is based on an individual scoring 5 or above on a twenty-item scale.

In addition to the SOGS, the CPGI was used to estimate the prevalence of problem gambling. The CPGI was employed to benchmark the current study to future studies in the NT and to recent studies in other jurisdictions (McMillen, Marshall et al. 2004; Queensland Government 2005). The CPGI consists of nine questions with responses

---

[1] A full explanation of these methods is contained in Appendix F8 of the National Gambling Survey, available electronically at http://www.pc.gov.au/inquiry/gambling/finalreport/index.html

for each scored from 0 to 3. Total scores therefore ranged from 0 to 27. A score of 8 or more indicates a problem gambler, a threshold recommended by the developers of the scale (Ferris and Wynne 2001). Appendix E contains a list of the questions that compose the respective screens.

1.3 The Telephone Survey

In order to accurately estimate the prevalence of what is a relatively small yet otherwise heterogenous subgroup of problem gamblers, at most only several percentage points of the general adult population, the population sample needed to be relatively large. Even in the more populous Australian States, it is difficult to generate large enough sample sizes for meaningful analysis. For example, the sample size used by the *National Gambling Survey* conducted during April of 1999 was 10,500 (of which 600 were NT residents). The target sample for the current survey was set at 2,000 completed interviews from an adult population of 138,225. This sample size enabled statistically reliable comparisons between different groups of gamblers, as well as a robust estimate of the level of problem gambling. The only feasible cost-effective way to achieve the target sample size was by a telephone survey. Telephone surveys have the advantage of being able to reach large numbers of respondents relatively cheaply and efficiently. This is particularly important where the population is geographically dispersed, as is the case in the NT, where a significant proportion of people live in remote locations. Telephone surveys are also useful for administering complex, logically-sequenced questionnaires like the one required for this study. The report draws attention to this limitation where different population groups may have been under-represented as a consequence of the limitation in the sampling frame. The full methods for conducting the telephone survey are contained in Appendix A.

In order to obtain a sample of problem gamblers large enough for reliable estimates and analysis, it was necessary to bias the sample towards those individuals who gamble regularly. To achieve this, a two-stage population survey was conducted, an approach that has been effectively adopted in Australia (Productivity Commission 1999) and overseas (Volberg 2002), and is standard practice for prevalence surveys. The technique involved selecting certain individuals for a full interview based on their gambling participation. Participants were categorised based on their responses to an initial screening questionnaire that assessed the type and frequency of their gambling behaviour.

The sample also needed to be adequately representative of the NT population. It was therefore stratified by gender, age, and geographic area. The age categories used were 18–24 years, 25–34 years, 35–49 years, and 50 years or older. Given the geographic concentration of the NT's population in urban centres, a decision was made to use these centres as the geographic units rather than regional areas. Using a broad regional geography would simply disguise the urban localities and introduce the risk of an ecological fallacy, where the characteristics of the aggregate are falsely attributed to individual units within it. Therefore, five urban areas (Darwin, Alice Springs, Katherine, Tennant Creek and Nhulunbuy) were selected which, when combined, accounted for 72% of the adult population. The two smaller centres Nhulunbuy (adult pop. 4,085) and Tennant Creek (adult pop. 2,132) were combined to obtain a single stratum large enough for analysis. All other residents were placed in a generic 'Rest of the NT' stratum.

Quotas for the telephone survey were based on an estimated adult resident population of 138,225. This figure was derived from the most current statistics (i.e. ABS labour force) available at the time of the telephone survey. This figure of 138,225 was used in the weighting process. The weighting process is a statistical adjustment that converts the data collected from the number of individuals in the survey sample (n) into a representation of this data for the entire NT adult resident population (N). It is necessary to point out that updated Estimated Resident Population (ERP) figures have been released, which estimated the NT adult resident population at June 2005 to be 143,314 persons. However, these updated estimates were not released until December 2005, several months after the survey had been completed. For purposes of consistency, the 138,225 estimate is used throughout the report to represent the total adult resident population.

1.4 Definitions of Primary Concepts

Before moving onto the results of the telephone survey, it is necessary to present the definitions of two key concepts used throughout this report. First, a 'gambler' was defined, following the lead of the Productivity Commission (1999), as anyone who had participated in any activity from a range of predefined gambling activities in the 12 months preceding the survey. A gambler was someone who had:

- Played poker machines or gaming machines
- Bet on horse or greyhound races, excluding sweeps
- Bought instant scratch tickets
- Played lotto or any other lottery game including Tattslotto, Powerball, the Pools, $2 Jackpot lottery, Tatts 2, or Tatts Keno
- Played Keno at a club, hotel, casino or any other place
- Played table games, such as blackjack or roulette, at a casino
- Played bingo at a club or hall
- Bet on a sporting event like football, cricket, or tennis
- Played casino games on the internet
- Played games like cards, or mah-jong privately for money at home or any other place
- Played any other gambling activity excluding raffles or sweeps.

From this list it is evident that this report is concerned primarily with regulated gambling. It does not address card playing within the Indigenous population, which is covered by a separate report. Once the broad definition of gambler had been decided, a subsequent categorisation of gambler type was employed, again following the lead of the Productivity Commission, in order to differentiate between gamblers based on the frequency or regularity with which they gambled. Three categories of 'gambler' were used. They were:

- Regular gambler – a respondent who participated in any single gambling activity (apart from lottery games or instant scratch tickets) at least once per week; or whose total participation in gambling activities (apart from lottery games or instant scratch tickets) was the equivalent of weekly (i.e. at least 52 times per year).
- Non-regular gambler – a respondent who gambled in any single gambling activity (apart from lottery games or instant scratch tickets) less than weekly.

or whose total participation in gambling activities (apart from lottery games or instant scratch tickets) was less than 52 times a year.

- Non-gamblers – those who did not gamble (on any activity apart from raffles) at all in the 12 months preceding the survey.

Lotteries were excluded from the regular gambler definition because the number of people who buy a lottery ticket is substantial (over half the adult population) (Productivity Commission 1999). Their inclusion as a regular gambler purely on this basis would have inflated the regular gambler category in a manner contradictory to the purpose of separating high frequency gamblers from the rest of the population. Similarly, those respondents who had only purchased raffle tickets in the 12 months preceding the survey were included in the non-gambler category. As raffles are not necessarily viewed as commercial gambling by many people, the motivations for buying tickets may have more to do with charity and community group support than with the possibility of material gain.

These categories were employed for several reasons. First, they enabled direct comparison with the national benchmark set by the Productivity Commission (1999). Second, they provided a framework for sampling purposes that would guide the sample size of regular gamblers necessary to enable statistically reliable comparison with the non-gambling or non-regular gambling population. This was necessary as the number of regular gamblers in the adult population is relatively small (around 7.5% in the NT in 1999). Third, they provided a filter to define the subset of problem gamblers, who are found within the regular gambler group. Fourth, they enabled a balanced comparison between gamblers and non-gamblers on the basis of selected socio-demographic, regional and gambling participation variables. This facilitated the social profiling of problem gamblers, regular gamblers and non-gamblers as distinct groups.

1.5 Structure of the Report

Chapter 2 presents an overview of gambling prevalence in the NT as well as participation in specific activities. It explores participation in each of the commercial gambling activities for the entire NT population as well as for the five geographic areas sampled. It then disaggregates the overall trends by examining variation according to gambling frequency, gender and age. It concludes by presenting the prevalence of the regular, non-regular, and non-gambler groups in the population including their representation in various population subgroups defined by socio-demographic characteristics.

Chapter 3 estimates the prevalence of problem gambling in the NT as measured by both the South Oaks Gambling Screen (SOGS) and the Canadian Problem Gambling Index (CPGI). It then compares the NT estimates with other jurisdictions, presents the estimates of problem gambling in regions, examines the prevalence of problem gambling in particular population subgroups, examines the gambling participation by problem gamblers, analyses the risk factors for problem gambling, and concludes by comparing the two gambling screens with recommendations for future use.

Chapter 4 estimates the self-reported expenditure of each group of gamblers. To contextualise the results it outlines the difficulties and uncertainties involved with this

kind of reported expenditure data. It then reports expenditure for gambling activity and gambler type, with a focus on problem gamblers. Comparisons between the self-reported expenditure and other sources of expenditure statistics conclude the chapter.

Chapter 5 examines the patterns of expenditure on poker machines in the NT from 1996 to 2005. It describes the growth in poker machines in community venues (i.e. pubs and clubs) and presents a detailed socio-spatial analysis of the factors which explain the identified patterns of expenditure including regulatory mechanisms, venue type, and the socio-economic status of venue locations.

Chapter 6 assesses community attitudes to gambling. It explores general attitudes to gambling as an activity, before narrowing on community perceptions of poker machines, including the number of machines as well as their perceived costs and benefits. Poker machines were specifically chosen as their growth in community venues over the past 10 years has represented the most significant change in the gambling landscape in the NT.

Chapter 7 summarises the main findings. It sets out a detailed agenda for future research which may build on the platform set out in the report.

The main text is supported by a series of Appendixes:

Appendix A sets out the methods employed by the prevalence survey.

Appendix B discusses the issue of under-representation of the Indigenous population and describes how this issue was approached by the project.

Appendix C sets out the sample characteristics of the prevalence survey before the weighting was applied.

Appendix D describes the data variables and analytical techniques employed by Chapter 5 on poker machine expenditure.

Appendix E contains the items for both the SOGS and the CPGI.

Appendix F contains a full copy of the questionnaire presented in the Computer-Assisted Telephone Interviewing (CATI) format.

Appendix G contains the full tabulated data for the graphs presented in each Chapter.

Appendix H presents a comparison of the NT prevalence survey results with those from the Productivity Commission's National Survey in 1999.

Appendix I presents prevalence results using the CPGI as the measure of problem gambling**.**

2. Gambling Participation

This chapter presents a description of gambling participation in three distinct stages. First, the total number of participants in each type of commercial gambling activity in the NT and regions is described. Second, the frequency of participation is examined for each individual activity. Third, participation in each activity is presented with reference to gender and age. Finally, the chapter presents the prevalence of the regular, non-regular, and non-gambler groups in the population inclusive of their representation in various population subgroups defined by socio-demographic characteristics. Participation in gambling activities are also presented in tables and figures from most prevalent to least prevalent in the total population.

2.1 Gambling Participation in the NT and Regions

The telephone survey found that 73.0% of the NT population participated in at least one gambling activity in the 12 month period preceding the survey, and almost two-thirds (63.8%) participated in more than one activity. This is 10% lower than the national average reported by the Productivity Commission in 1999[2].

Playing lotto or another lottery game had the highest participation rate (52.8% of the adult population) (refer to Figure 2.1). The next most frequent gambling activities were buying instant scratch tickets (28.6%), playing poker or gaming machines (27.0%), playing keno (22.6%) and betting on horse or greyhound races (19.0%). A small proportion of NT adults played bingo (1.9%) and even fewer individuals (0.6%) played Internet casino games.

---

[2] There has been no national survey of gambling prevalence since 1999 which means the Productivity Commission's Report represents the best data at the national level. However, due to the time elapsed as well as the continued growth of the gambling industries, comparisons must be made with some caution. Therefore, comparisons are drawn sparingly in the body of this report and used only where there is a compelling reason. To enable full comparison of the NT prevalence survey and the Productivity Commission's results a series of tables are presented in Appendix H for this purpose.

Figure 2.1: Percentage of NT adult population engaging in gambling by activity (N = 138,225)

Gambling activity	Percentage (%)
At least one gambling activity	73.0
Played lotto or other lottery game	52.8
Bought instant scratch tickets	28.6
Played poker or gaming machines	27.0
Played keno at club/hotel/casino/other	22.6
Bet on horse or greyhound races	19.0
Played table games at casino	10.3
Bet on a sporting event	5.2
Played games like cards privately for money	3.7
Played bingo at a club or hall	1.9
Played any other gambling activity	1.1
Played an internet casino game	0.6

Notes: 1) The error bars presented on this and all subsequent graphs represent the standard error of the estimate. Put another way, there is 67% certainty that the true value lies within the range depicted by the bars, or a 95% confidence interval for the estimate is provided by a range *twice* this width. 2) The source for this Figure and all Figures and Tables throughout this document unless otherwise stated is the NT Gambling Prevalence Survey 2005.

These participation rates are generally lower than the Australian average measured in the same way by the Productivity Commission in 1999. Table 2.1 sets out the comparative participation levels.

Table 2.1: Participation and frequency of gambling by adult for Australia 1999[1] and the NT 2005[2]

Gambling activity	Total participation (%)	
	Australia 1999	NT 2005
Played lotto or other lottery game	60	53
Bought instant scratch tickets	46	29
Played poker or gaming machines	39	27
Bet on horse or greyhound races	24	19
Played keno at club / hotel / casino / other	16	23
Played table games at a casino	10	10
Bet on a sporting event	6	5
Played bingo at a club or hall	5	2
Played games privately for money	5	4
Played an Internet casino game	0.4	0.6
Any gambling activity	82	73

Source: 1999 PC National Gambling Survey and 2005 NT Gambling Prevalence Survey.

In fact, NT residents only participated in one activity, keno, more than all Australians in 1999. Given the popularity of keno may have increased in the years since the Productivity Commission completed its survey, it is not certain that NT residents are currently more enthusiastic keno players than their national counterparts.

Figure 2.2 presents a regional breakdown of each gambling activity for the five sampled areas within the NT: Darwin, Alice Springs, Katherine, Tennant Creek/Nhulunbuy, and the Rest of the NT (for more details on the geographic split of the sample frame, please refer to Appendix A). Surprisingly, given they had the greatest available range of gambling opportunities, including the Territory's two casinos, the major centres of Darwin and Alice Springs did not display the highest participation rates.[3] The highest rate was in Tennant Creek/Nhulunbuy where slightly more people gambled than in Darwin, which had the next highest participation rate. The lowest rate was in the Rest of the NT, no doubt reflecting reduced access to gambling opportunities outside the main urban centres.

Figure 2.2: Percentage of adult population engaging in any gambling activity in each of five regions in the NT (N = 138,225)
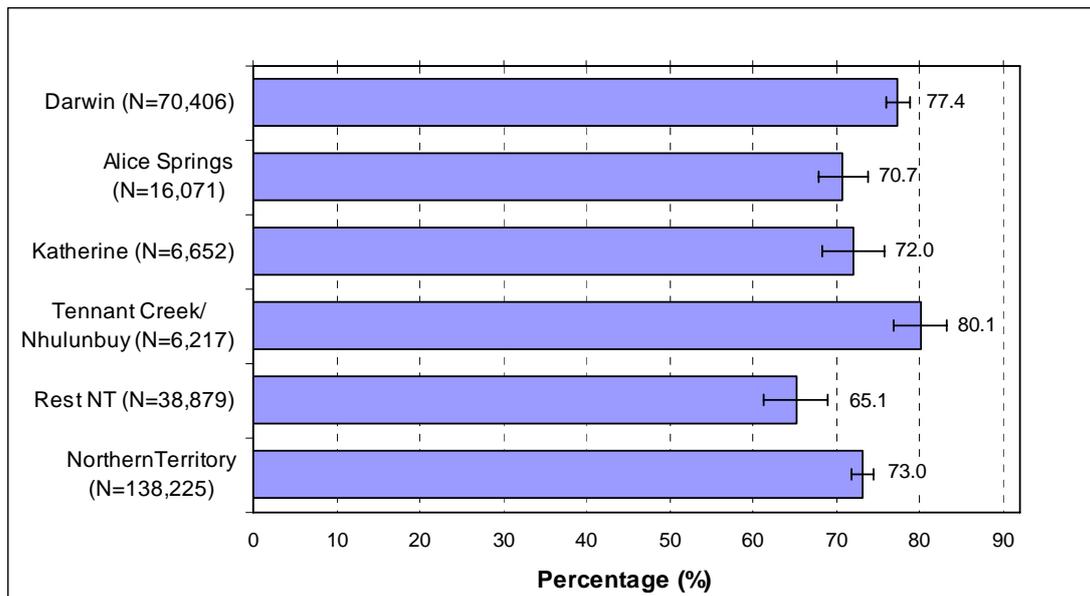
Figure 2.3 presents a regional breakdown of gambling activity for the five sampled areas. The bars in Figure 2.3 represent the percentage of the population in each region who had participated in each gambling activity in the previous 12 months. In terms of participation in individual gambling types by area the differences between regions were modest, as indicated by the number of overlapping error bars in this figure.

Of interest were the gambling participation rates in individual activities for the smaller remote urban centres of Katherine and Tennant Creek/Nhulunbuy. Understandably, Katherine and Tennant Creek/Nhulunbuy featured the lowest participation in playing table games at a casino which reflects lack of casino access in these places. However, Tennant Creek/Nhulunbuy and Katherine displayed participation levels comparable to the main urban centres for all other activities. This indicates that gambling participation, as measured by this fairly crude overall indicator, is distributed reasonably consistently through the urban centres of the NT.

---

[3] The survey on which this report is based, while including Indigenous card-playing within its scope (which is an unregulated gambling activity), most likely under-estimates this type of gambling activity as many Indigenous households do not have a telephone. Card playing is the subject of a separate report.

The most consistent general difference was between the Rest of the NT and the urban centres. Specifically, the non-urban centres of the NT featured lower rates of participation than the urban centres across most gambling activities. This may partly reflect the reduced access to gambling venues in these non-urban contexts. Table-game gambling at a casino represented an exception to this finding. Here the Rest of the NT participation level was comparable with that of residents of Darwin and Alice Springs. It may be suggested that people in remote areas visit the casino as part of their trips to the main centres. The timeframe for these participation figures is 12 months, providing ample opportunity for a casino visit. However, this finding raises another important issue. The effect of a particular venue is not limited to its immediate location. The NT population is mobile and an understanding of these patterns of mobility as they relate to gambling, particularly as they relate to casino visits, would deepen our knowledge of the social impacts of gambling in the NT. The specific socio-spatial effects of regional gambling venues are explored comprehensively in Chapter 5.

Figure 2.3: Percentage of adult population engaging in gambling by activity in each of five regions in the NT (N = 138,225)
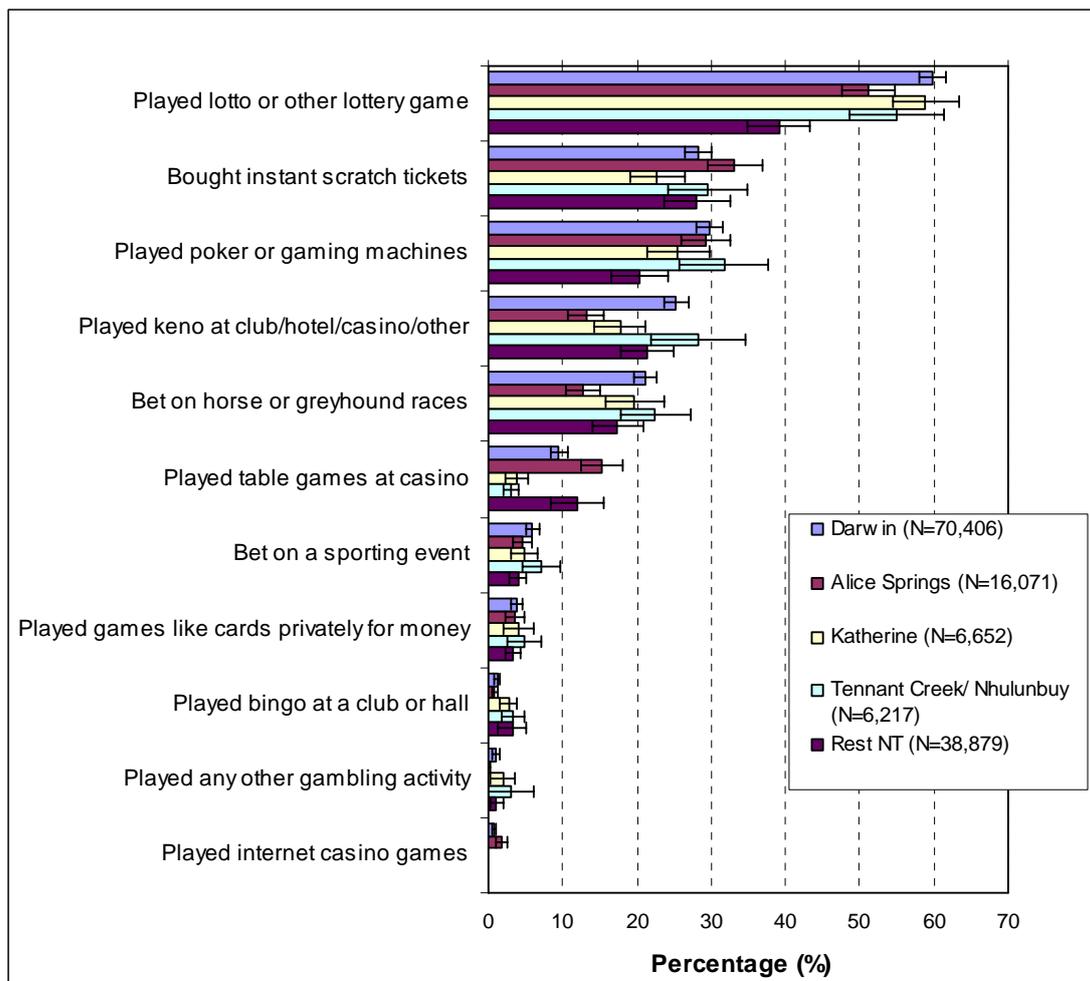
Note: Internet casino games were played by survey respondents in Darwin and Alice Springs only.

2.2 Frequency of Gambling Participation

Figure 2.4 presents the frequency of gambling in each activity by the NT adults who participated in that activity. The gambling types participated in most frequently were those that were weekly events, including lotteries, bingo and sports-betting. Internet casino games were next in frequency of participation, possibly reflecting availability of internet access within the household although relatively few people engaged in this activity (0.6% of the adult population). The rest of the gambling types featured reasonably similar frequency profiles, apart from casino table games, which were engaged in more periodically. A description of each gambling type frequency is presented below.

Figure 2.4 Frequency of participation in gambling activities in the NT
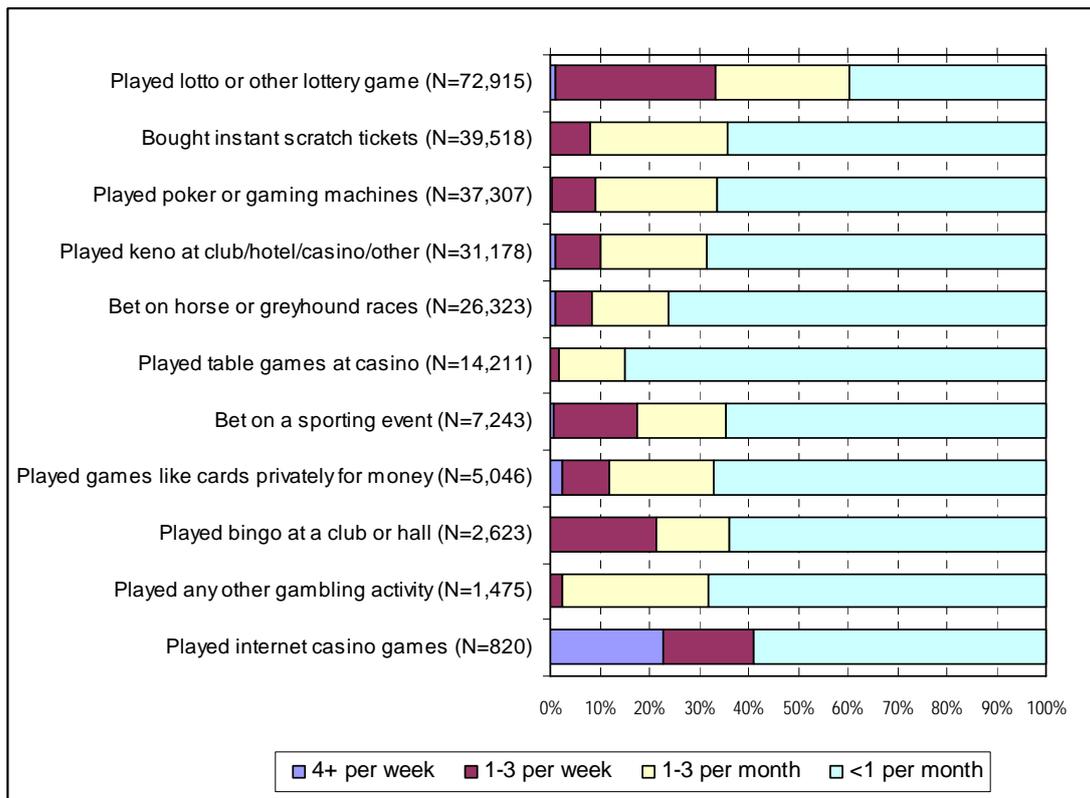
- **Lotto or other lottery game players (N=72,915, 52.8% of adults)**

One third of lottery players gambled 1 to 3 times per week. A slightly higher proportion of lotto gamblers gambled less than once a month. Just over one quarter participated in this form of gambling 1 to 3 times a month and less than 1.0% participated more than 3 times per week.

- **Instant scratch tickets buyers (N=39,518; 28.6% of adults)**

Almost two-thirds of purchasers bought tickets them less than once a month. Over one quarter purchased tickets 1 to 3 times per month and less than 10% purchased them 1 to 3 times per week. Only a fraction of 1% of instant scratch ticket players did so more than 3 times a week.

- **Poker or gaming machines players (N=37,307, 27.0% of adults)**

More than two thirds of poker machine players gambled less than once a month and almost one quarter gambled 1 to 3 times a month. A relatively small proportion, less than 10%, gambled 1 to 3 times per week and a fraction of 1% gambled more than 3 times per week.

- **Keno players at clubs / hotels / casinos / other (N=31,178, 22.6% of adults)**

The pattern of individuals gambling on keno was similar to that for poker machine players. Around two thirds gambled less than once per month, around one-fifth gambled 1 to 3 times per month, less than 10% gambled 1 to 3 times per week, and around 1% gambled more than 3 times per week.

- **Horse or greyhound race bettors (N=26,323; 19.0% of adults)**

More than three quarters of bettors gambled less than once per month. Of the remainder, around 15% gambled 1 to 3 times per month, less than 10% gambled 1 to 3 times per week and around 1% gambled more than 3 times per week.

- **Table game players at a casino (N=14,211, 10.3% of adults)**

The majority of table game players gambled less than once per month. A little over 10% gambled 1 to 3 times per month, while small proportions of casino table gamblers were regular gamblers (around 2%).

- **Sporting event bettors (N=7,243, 5.2% of adults)**

Under two-thirds of sports bettors gambled less than once per month. Similar proportions gambled 1 to 3 times a week and 1 to 3 times a month respectively. Only a very small proportion gambled on a sporting event more than 3 times per week.

- **Participants in playing games privately for money (N=5,046, 3.7% of adults)**

Around two thirds of the individuals who played games privately for money did so less than once per month, more than 20% gambled 1 to 3 times per month and around 10% gambled 1 to 3 times per week. However, a higher proportion than for any other gambling activity, apart from Internet casino games, gambled privately more than 3 times per week

- **Bingo players at a club or hall (N=2,623, 1.9% of adults)**

Although two thirds of the estimated 2,626 bingo players in the NT played less than once per month, almost one quarter played 1 to 3 times per week. None played more than 3 times per week and around 10% played 1 to 3 times per month.

- **Participants in any other gambling activity (N=1,475, 1.1% of adults)**

Participation in other unspecified gambling activities followed the general pattern for most activities; over two-thirds played less than once per month, less than one third gambled 1 to 3 times per month, and the remainder gambled 1 to 3 times per week.

- **Internet casino game players (N=820, 0.6% of adults)**

Internet casino gamblers comprised the smallest group of gamblers. Only 0.6% of the NT population participated in this activity. In comparison with other gambling

activities, Internet casino gamblers did so more frequently; just over one quarter of the estimated 820 internet casino gamblers participated in this activity 4 or more times per week, and a further 18% gambled 1 to 3 times per week. The remainder gambled less than once per month.

2.3 Gambling Participation by Gender and Age

2.3.1 Gambling participation and gender

Figure 2.5 presents information about gambling participation by males and females in order to establish whether any gender differences exist in participation rates. As this figure demonstrates the patterns were not markedly different for the more prevalent activities. However, for the two activities, table games and sports-betting, males participated much more frequently – three to four times as often as females. Females were marginally more likely to purchase instant scratch tickets.

Figure 2.5: Percentage of NT adults who gambled by activity for males (N=71,415) and females (N=66,810)
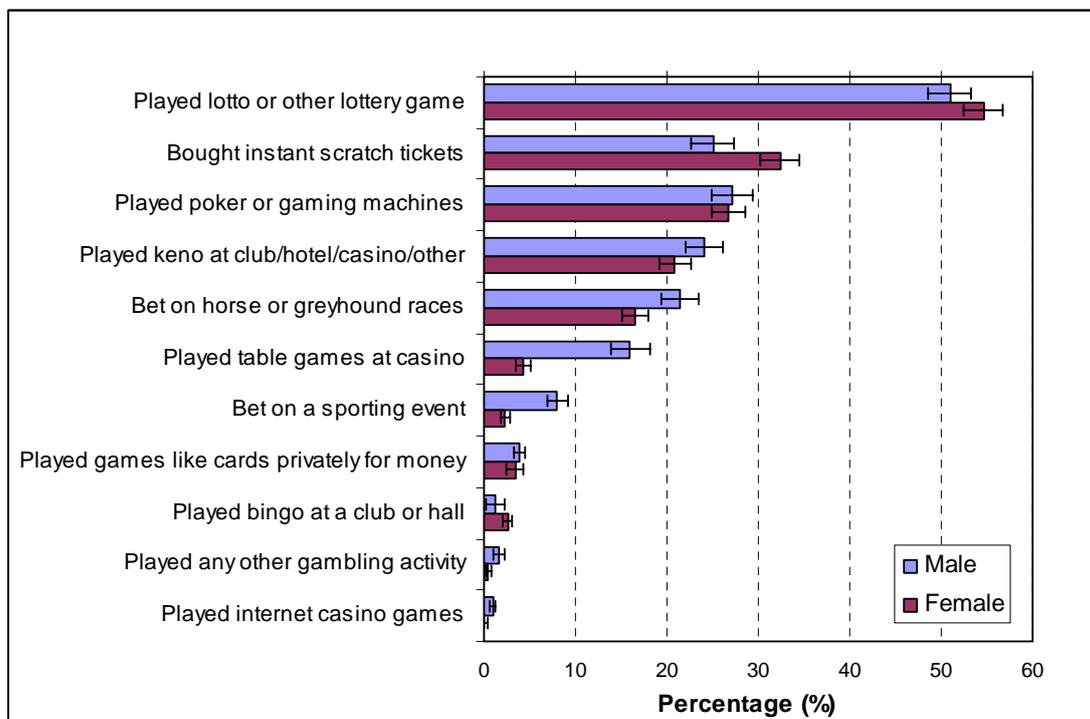
2.3.2 Gambling participation and age

Figure 2.6 presents a comparison of gambling participation across different age groups. The most significant age-related difference was with lotteries. Specifically, people 18–24 were half as likely to purchase lotto tickets than people in the older age groups. For all gambling activities apart from playing lotto, there was a general trend of decreasing rates of participation with increasing age. Figure 2.6 clearly shows that younger people tended to have higher rates of participation in buying instant scratch tickets, playing poker machines, playing table games at a casino, playing Internet casino games, and playing games privately for money. However, as indicated by the standard error bars, these differences were relatively minor. Nonetheless, the pattern

of higher gambling participation by younger age groups across a range of activities is an issue of some interest. It may be that younger people are more active and mobile so have greater exposure to gambling opportunities.

Figure 2.6: Percentage of NT adults who gambled by activity for age groups 18–24 years (N=20,163), 25–34 years (N=33,296), 35–44 years (N=29,538), 45-54 years (31,264) and 55+ years (N=23,963)
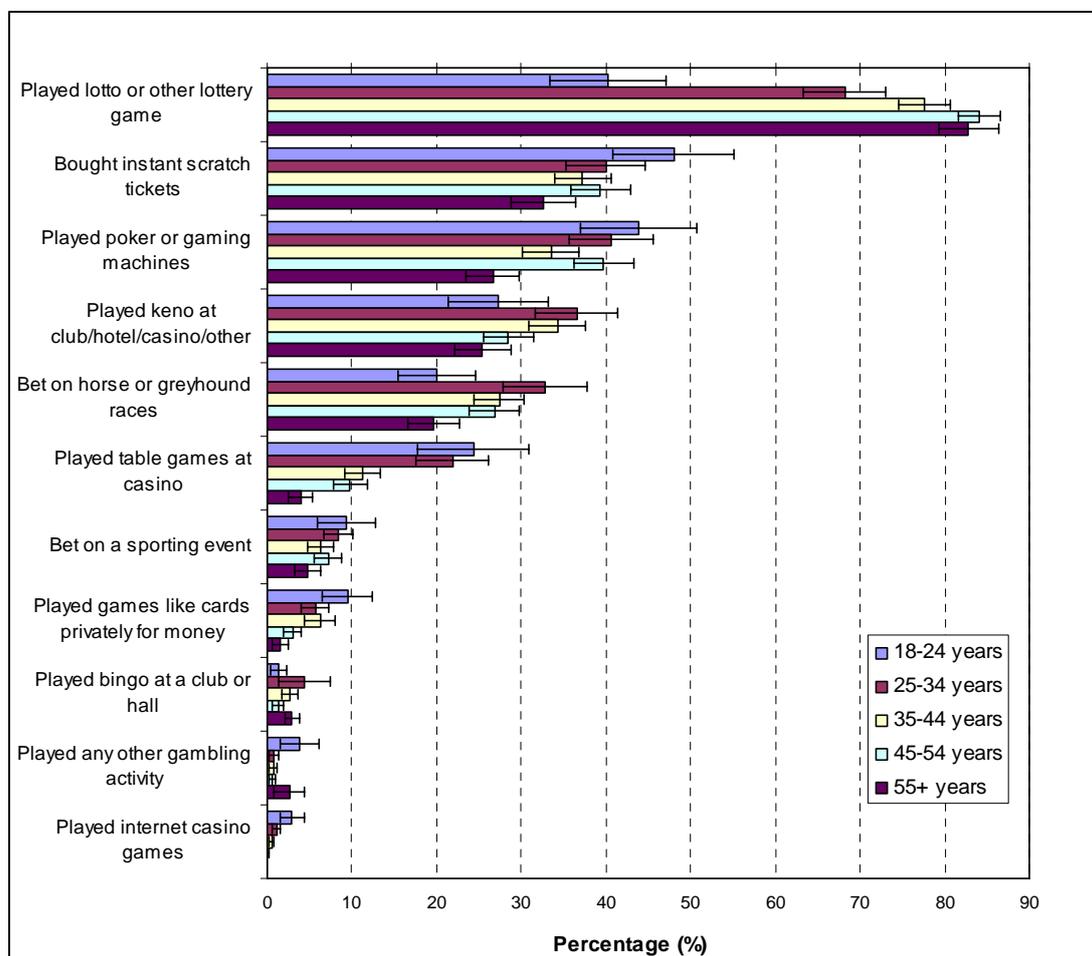
2.3.3 Participation and gambler type

A relatively small proportion of the NT adult population gambled regularly (between 7–8%, see Table 2.2.). Regular gamblers were defined as respondents who participated in any single gambling activity (apart from lottery games or instant scratch tickets) at least once per week; or whose total participation in gambling activities (apart from lottery games or instant scratch tickets) was the equivalent of weekly (i.e. at least 52 times per year). Non-regular gamblers, on the other hand, were respondents who gambled in any single gambling activity (apart from lottery games or instant scratch tickets) less than weekly, or whose total participation in gambling activities (apart from lottery games or instant scratch tickets) was less than 52 times a year.

However, these regular gamblers are responsible for the bulk of gambling expenditure. It is therefore instructive to consider the differences in gambling

activities between regular and non-regular gamblers. Figure 2.7 provides a clear illustration of the very different participation profiles of regular and non-regular gamblers. Excluding the purchase of instant scratch tickets and lotto, where participation rates were not significantly different, regular gamblers were more likely than non-regular gamblers to participate in all other gambling activities. The most substantial differences in participation rates were for playing keno, playing poker machines, and betting on horse or greyhound races. For these activities regular gamblers participated in these activities at more than twice and up to four or five times the rate of non-regular gamblers.

Figure 2.7: Percentage of NT adults who gambled by activity for regular (N=10,359) and non-regular (N=90,583) gamblers
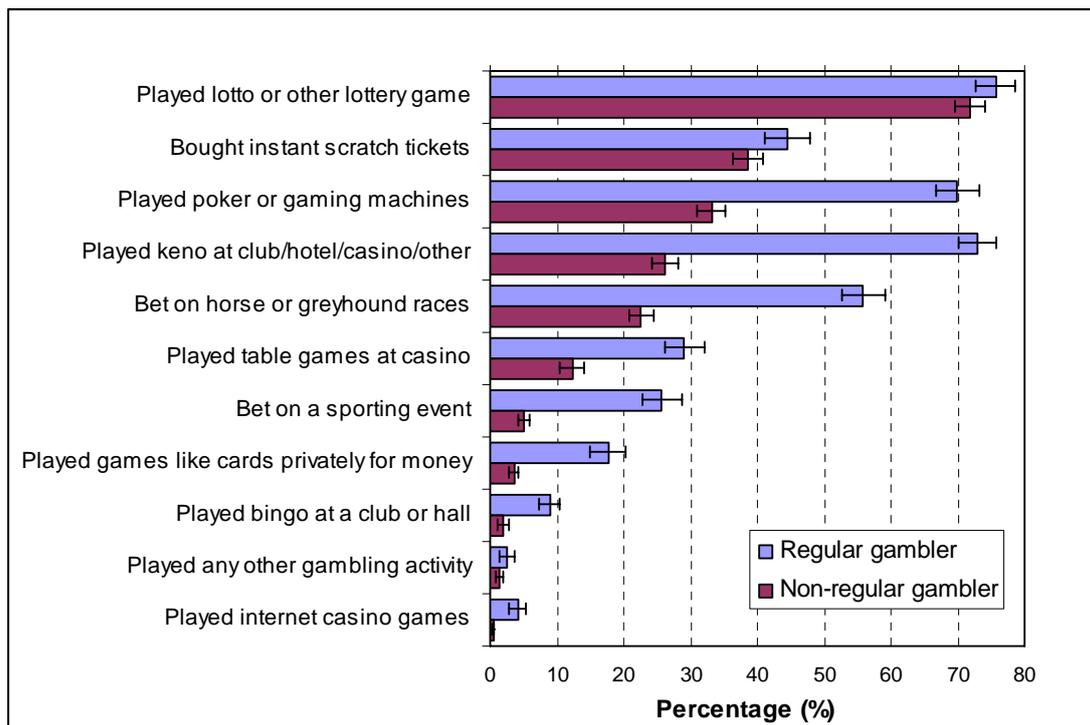
2.4 Prevalence of Gamblers within Population Subgroups

Table 2.2 presents the prevalence of regular gamblers, non-regular gamblers, and non-gamblers broken down by various social categories within the NT population. It presents the percentage estimates as a range with a lower and upper value (standard error). Point estimates are available in Appendix G. The first row on Table 2.2 indicates there are between 7.0% and 8.0% regular gamblers, between 64.0% and 67.0% non-regular gamblers, and between 25.6% and 28.3% non-gamblers in the NT population of 138,225 adults. The subsequent rows set out the relative proportion of gambler type in each social category (i.e. gender, age etc). Emboldened percentages which do not overlap the range for the entire NT represent either probable over- or under-representation for that regional or social category. For example, between 9.2% and 11.0% of males are regular gamblers, which is higher than the NT average of between 7.0% and 8.0%. Thus males are over-represented in the regular gambler category. From Table 2.2 it is evident that males are twice as likely as females to be

regular gamblers. The points below summarize all the main prevalence findings for each gambler type by socio-demographic characteristic (i.e. all the emboldened values). The points are listed in decreasing variation from the NT average.

Regular gamblers were *over-represented* within:

- the over 55 years age group
- males
- group households
- retirees
- those educated to secondary level
- households with an income over $80,000 p.a.

Regular gamblers were *under-represented* within:

- the 35 to 44 year old age group
- females
- those with some university education
- people in part-time employment
- couples with children
- households with an income less than $20,000 p.a.

Non-regular gamblers were *over-represented* within:

- people who are unemployed or looking for work
- households that earned less than $20,000 and households that earned between $80,000 and $99,999
- one-parent families with children.

Non-regular gamblers were *under-represented* within:

- self-supporting retirees
- group households.

Non-gamblers were *over-represented* within:

- group households
- some university education
- people born overseas.

Non-gamblers were *under-represented* within:

- households that earned between $20,000 and $39,999 p.a. and above $80,000 p.a.
- couples with no children
- those with primary and secondary education
- unemployed or looking for work.

Table 2.2. Prevalence (percentage and standard error) of regular, non-regular and non-gamblers for different socio-demographic groups for the NT population

	Regular gambler Lower – Upper Bounds (%)	Non-regular gambler Lower – Upper Bounds (%)	Non-gambler Lower – Upper Bounds (%)	Total number of people (N)
All NT	7.0 - 8.0	64.1 - 67.0	25.6 - 28.3	**138,225**
Gender[1]				
Male	**9.2 - 11.0**	61.8 - 66.1	24.1 - 27.8	71,415
Female	**4.2 - 5.2**	65.3 - 69.2	26.2 - 29.9	66,810
Age[1]				
18-24 yrs	6.1 - 10.0	61.6 - 72.0	20.3 - 30.0	20,163
25-34 yrs	5.3 - 7.5	60.8 - 67.4	26.5 - 32.6	33,296
35-44 yrs	**5.4 - 7.0**	64.4 - 69.2	24.8 - 29.3	29,538
45-54 yrs	6.2 - 7.9	65.1 - 70.2	22.9 - 27.7	31,264
55+ yrs	**9.3 - 12.2**	59.2 - 65.1	24.4 - 29.7	23,963
Indigenous status[2]				
Indigenous	4.6 - 8.2	56.6 - 69.4	24.5 - 36.7	14,491
Non-Indigenous or refused	7.0 - 8.1	64.5 - 67.3	25.3 - 27.9	122,404
Country of birth[2]				
Australia	6.8 - 8.0	64.9 - 68.2	24.6 - 27.6	111,664
Other country	6.3 - 8.5	58.4 - 64.3	**28.4 - 34.1**	25,231
Marital status[2]				
Married or living with a partner	6.6 - 8.0	63.6 - 67.0	25.8 - 29.0	91,026
Separated or divorced	7.2 - 10.6	64.1 - 71.5	20.0 - 26.6	9,519
Widowed	7.0 - 13.7	59.8 - 73.7	17.0 - 28.8	2,130
Single	6.0 - 8.2	62.4 - 69.2	24.0 - 30.2	33,899
Household type[2]				
Single Person	6.2 - 8.9	64.4 - 71.3	21.6 - 27.7	18,014
One parent family with children	4.2 - 7.7	**70.7 - 81.0**	**13.9 - 22.4**	8,416
Couple with children	**4.9 - 6.2**	63.9 - 68.0	26.6 - 30.4	54,564
Couple with no children	7.4 - 9.6	65.9 - 71.3	**20.5 - 25.3**	36,996
Group household	**8.9 - 14.1**	**42.1 - 53.5**	**34.8 - 46.6**	14,020
Highest level of education[3]				
Primary & below	6.8 - 9.3	66.4 - 72.5	**19.8 - 25.3**	30,842
Some secondary	**8.5 - 10.7**	65.0 - 70.5	**20.1 - 25.3**	44,566
Some tertiary (not uni)	6.4 - 8.8	59.1 - 65.7	27.0 - 33.0	17,731
Some university	**4.0 - 5.4**	59.8 - 65.0	**30.5 - 35.4**	42,970
Household income[4]				
Less than $20,000	**4.2 - 6.6**	63.8 - 70.2	22.6 - 28.3	18,665
$20,000-$39,999	5.4 - 7.5	66.9 - 73.2	**19.7 - 25.4**	25,375
$40,000-$59,999	5.3 - 7.4	64.8 - 70.7	22.1 - 27.8	35,361
$60,000-$79,999	5.1 - 7.5	63.0 - 69.3	23.9 - 29.8	18,923
$80,000-$99,999	**8.7 - 14.9**	62.1 - 74.2	**15.0 - 24.2**	8,246
$100,000 or more	7.8 - 13.3	65.2 - 75.2	**13.7 - 21.0**	8,230
Labour force status[5]				
Working full-time	7.3 - 8.6	63.9 - 67.4	24.7 - 28.1	93,933
Working part-time	**3.8 - 5.8**	63.0 - 70.2	25.2 - 32.0	16,849
Home duties	3.2 - 7.1	58.5 - 69.0	26.0 - 36.1	7,352
Student	2.3 - 8.6	56.5 - 75.8	19.0 - 37.8	4,282
Retired (self-supporting)	**8.2 - 14.2**	**50.1 - 62.1**	27.2 - 38.2	5,739
Pensioner	5.6 - 10.4	64.1 - 76.7	16.2 - 26.9	4,195
Unemployed / looking for work	2.0 - 7.4	**73.8 - 88.8**	**7.8 - 20.1**	3,224

Notes: 1) Midpoints for percentage ranges may not total to 100% across rows due to rounding.
2) Population totals may not add to 138,225 in all socio-demographic variables due to missing data (see below). 3) The total number of people represents weighted survey data.

[1] Population total is 138,225; [2] Population total is 136,895; [3] Population total is 136,818; [4] Population total is 118,839; [5] Population total is 136,874.

In summary, the variables that most discriminated between the gambler type were: gender (men twice as likely to be regular gamblers), income (higher income earners are more likely to be regular gamblers), and education (better educated people generally less likely to gamble compared to the NT average). Family structure was also a significant variable. Couples with children were under-represented in the regular gambler category, as were the 35 to 44 years age group, while one parent families were over-represented in the non-regular gambler category. Retirees were over-represented among regular gamblers, and part-time workers were under-represented. People on home duties and those unemployed were approaching under-representation. Unemployed people were also under-represented amongst the non-gamblers, but over-represented in the non-regular gamblers. Group households were over-represented in the regular and non-gambler categories, indicative of the varied social composition within them. These variables relating to family structure suggest that various time and financial constraints, as well as stage in the lifecycle, do influence gambling behaviour.

3. Problem Gambling

This chapter is specifically concerned with the prevalence of problem gamblers in the NT population, including the characteristics of problem gamblers and the risk factors that may predict the problem gambler profile. It presents a sequenced analysis that:

- estimates the prevalence of problem gambling in the NT as measured by both the South Oaks Gambling Screen (SOGS) and the Canadian Problem Gambling Index (CPGI);
- presents the estimates of problem gambling in the NT regions;
- compares the NT problem gambling estimates with those for other jurisdictions;
- examines the prevalence of problem gambling in particular population subgroups;
- analyses the risk factors for problem gambling;
- examines gambling participation by problem gamblers; and
- compares the two gambling screens with recommendations for future use.

3.1 Prevalence of Problem Gambling

The prevalence of problem gambling in the NT, as defined by the SOGS 5+ threshold, is 1.06% with an upper and lower bound for the standard error between 0.9% and 1.3% (Table 3.1). Therefore, the 95% confidence interval for the prevalence is 0.73% to 1.43%. This means that, as measured by the SOGS, the NT has an estimated 1,465 problem gamblers with a approximate lower bound of 1,000 and upper bound of 2,000. The prevalence of gamblers with severe problems, as defined by the SOGS10+ threshold, was 0.23%. This translates to approximately 320 adult residents with severe gambling problems. When calculated as a percentage of the population of 10,160 regular gamblers, the prevalence of problem gambling (SOGS 5+) is 14.27%. The companion rate for severe problem gamblers (SOGS 10+) is 3.0%.

The CPGI 8+ provided a lower estimate of problem gambling at 0.64% of the NT population with an upper and lower bound for the standard error between 0.52% and 0.76% (Table 3.1). Therefore, the 95% confidence interval for the prevalence is 0.40% to 0.88%. This translates to an estimated 885 problem gamblers with an approximate lower bound of 550 and higher bound of 1,200.

At this point it is necessary to note the different estimates produced by the CPGI and the SOGS. This difference is important as a somewhat different picture of problem gambling prevalence is painted depending on the screen used. Perhaps more importantly, the choice of screen affects the definition of problem gamblers as a subgroup. In practice, of course, there is no single 'cut-off' point beyond which a persons gambling is 'a problem', but not a problem below this threshold. Rather, there is a continuum with gambling activity and behaviours gradually becoming more of a problem as they progress up the continuum. It is likely that how problem gamblers are described, and attributed characteristics will differ according to the measurement instrument used. These questions are specifically addressed at the end of this chapter (see Section 3.9). As far as the description of problem gamblers go for the remainder

of this chapter, the SOGS 5+ is the screening tool used. On this basis the discussion will concentrate on the characteristics of problem gamblers including their socio-demographic characteristics, gambling preferences, regional location, and associated risk factors.

Table 3.1: Problem gambling prevalence for the NT using SOGS 5+, SOGS 10+ and CPGI

Gambling screen	Prevalence estimate (%)	Prevalence +/- SE of estimate	Prevalence +/- 95% CI of estimate
% SOGS (5+) problem gamblers in NT population[a]	1.06	0.89 - 1.25	0.73 - 1.43
% SOGS (10+) problem gamblers in NT population[a]	0.23	0.15 - 0.30	0.07 - 0.37
% CPGI (8+) problem gamblers in NT population[a]	0.64	0.52 - 0.76	0.40 - 0.88
% regular gamblers in NT population[a]	7.49	6.97 - 8.02	6.47 - 8.53
% SOGS (5+) problem gamblers out of regular gamblers[b]	14.27	12.14 - 16.40	10.10 - 18.44
% SOGS (10+) problem gamblers out of regular gamblers[b]	3.00	2.05 - 3.96	1.14 - 4.88
% CPGI (8+) problem gamblers out of regular gamblers[b]	8.51	6.89 - 10.5	5.33 - 12.41

Notes: [a] The weighted population used was 138,225 persons; [b] Regular gamblers 10,359 (+/- 638).

3.2 Problem Gambling in Regions

Figure 3.1 (next page) presents the prevalence of problem gamblers as a percentage of the adult population for the five areas sampled in the survey. The rank order of problem gambling prevalence from highest to lowest is Alice Springs, Katherine and Darwin (similar), Tennant Creek/ Nhulunbuy, and Rest of the NT.

Consistent with the understanding that problem gamblers are a subset of regular gamblers, a higher incidence of problem gambling may be expected in regions where there was greater regular participation in gambling. The regions which had the highest rates of regular gambling were Tennant Creek/Nhulunbuy and the Rest of the NT (Figure 3.2). In these areas regular gamblers comprised around 5% more of the population than in the NT as a whole (Figure 3.2). However, although both these regions had a higher proportion of regular gamblers, they did not have more problem gamblers. In fact the prevalence of problem gambling was lowest in these two areas. This suggests that participation *per se* does not necessarily lead to increased gambling problems.

A possible explanation may be that there is less to do in the smaller, remote areas, so more people gamble recreationally, and these individuals are not at risk from developing gambling-related problems because their motivations for gambling may be different. The issue may also be to some extent one of access, in which the gambling opportunities of preference to problem gamblers, namely poker machines, are less prevalent in remote centres, or are located in venues which may not be particularly attractive to many individuals for one reason or another.

Figure 3.1: SOGS problem gamblers as a percentage of the population for regions and the NT
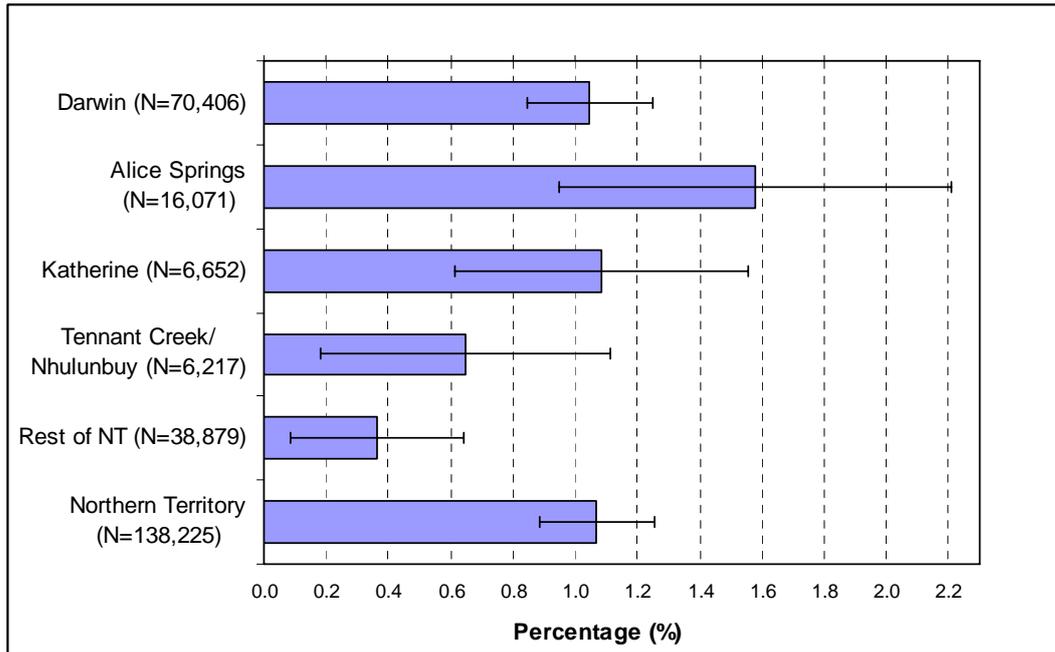
The finding that Darwin and Alice Springs had slightly higher, although not significantly higher, proportions of problem gamblers may be explained by the easier access to casinos in both these areas combined with the more widespread availability of gambling opportunities, particularly poker machines. Where the 'Rest of the NT' fits into this picture is unclear. The area represents essentially all the NT outside the urban centres surveyed, and thus represents considerable geographic diversity. It may be that this level of aggregation masks the heterogeneity within it.

Figure 3.2: SOGS problem gamblers and regular gamblers as a percentage of the population for regions and the NT
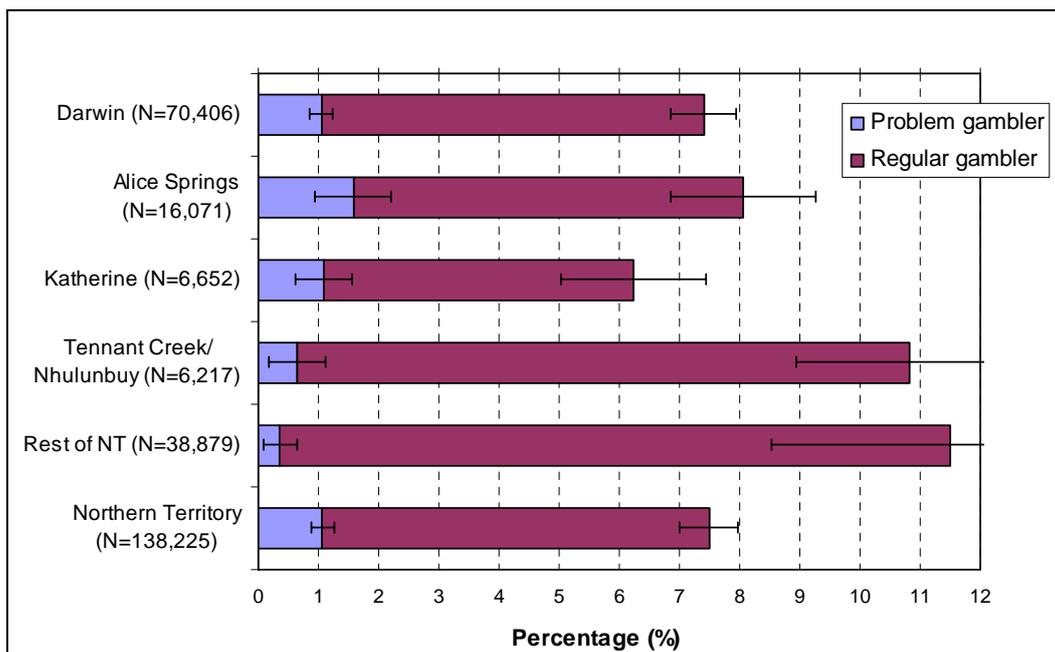
3.3 Comparison of NT Problem Gambling Prevalence with other Jurisdictions

Comparative prevalence estimates for Australia and for the individual States and Territories, as estimated by the Productivity Commission in 1999, are presented in Table 3.2. While these results are obviously dated, they are useful in that they position the NT in the context of other jurisdictions at that time. It is evident that in 1999 the NT had a lower prevalence of problem gambling than NSW, Victoria, and the ACT, was on a par with Queensland, but was higher than WA and Tasmania.

The current SOGS-based results may be directly compared with the results of the National Gambling Survey 1999 which reported a problem gambling rate of 2.07% for Australia and 1.89% for the NT using the SOGS 5+ threshold. The current study found a lower problem gambling prevalence rate for the NT (1.1% compared to 1.9%), and more than double the prevalence rate for severe (SOGS 10+) problem gamblers (0.23% compared to 0.10%).

Table 3.2: Prevalence of problem gambling as measured by the National Gambling Survey 1999

	SOGS 5+	SOGS 10+
New South Wales	2.55%	0.33%
Victoria	2.14%	0.35%
Queensland	1.88%	0.38%
Western Australia	0.70%	0.00%
South Australia	(a)	(a)
Tasmania	0.44%	0.00%
Australian Capital Territory	2.06%	0.07%
Northern Territory	1.89%	0.10%
Australia	2.07%	0.33%

Note: (a) The prevalence result for problem gamblers for South Australia was found to be relatively high compared to other states (SOGS 5+ was 2.45%; SOGS 10+ was 0.73%), which was attributed to sampling error.
Source: Productivity Commission National Gambling Survey 1999.

Obviously, comparisons made between these data and data collected over 6 years ago are dubious due to the fact that problem gambling prevalence may vary over time in response to changes in a host of factors including, amongst others, population changes, new technologies, changes in gambling accessibility, and changes in policy. Fortunately, during that period, three more recent prevalence studies have been conducted, two in Queensland (Queensland Government 2005) and one in Victoria (McMillen, Marshall et al. 2004). Both Queensland studies used the CPGI while the Victorian study compared the CPGI, SOGS, and Victorian Gambling Screen. The prevalence estimates for these studies are presented in Table 3.3.

Table 3.3: Recent problem gambling estimates from other jurisdictions

	Qld 2001[1]	Qld 2003/04[1]	Victoria 2003[2]	NT 2005[3]
CPGI 8-24	0.83	0.55	0.97	0.64
SOGS 5+	-	-	1.12	1.06

Sources: [1] Queensland Household Gambling Survey 2001; 2003-4; [2] 2003 Victorian Longitudinal Communities Attitudes Survey (ANU); [3] NT Gambling Prevalence Survey 2005.

According to the CPGI, the NT has a lower problem gambling prevalence than Victoria but marginally higher than the most recent estimate for Queensland. This is a similar rank order to the national results in 1999 (refer to Table 3.1). The case of Victoria is interesting as the CPGI and SOGS produced more similar estimates of problem gambling. However, for the NT there is a relatively large difference (0.42% of the adult population, or 580 individuals) between the respective estimates provided by the SOGS and the CPGI. Care should be taken to avoid over attributing meaning to these differences as the estimates' standard errors are relatively large.

This again raises the question of why this discrepancy occurs and which estimate is likely to be the most accurate? The reasons why they differ and what the implications are for a choice of screen are addressed toward the end of this chapter in Section 3.9. For the following sections of this chapter will concentrate on the characteristics of problem gamblers as defined by the SOGS5+, including their socio-demographic characteristics, gambling preferences, regional location, and associated risk factors.

3.4 Prevalence of Problem Gamblers within Population Subgroups

Having defined problem gamblers as a group, it is instructive to investigate their prevalence in particular subgroups of the population. For example, are problem gamblers over-represented within the male population, or within low income earners, or within older people? Table 3.4 presents the prevalence of problem gamblers (defined as SOGS5+), regular non-problem gamblers, non-regular gamblers, and non-gamblers in the NT population and for a range of subgroups based on gender, age, Indigenous identification, country of birth, marital status, household type, education, income, and employment. This format is similar to the earlier Table 2.2, the difference being the separation of problem gamblers from the population of regular gamblers in Table 3.4. The emboldened numerals in Table 3.4 indicate prevalence levels that are either above or below the NT average for each group. As regular gamblers, non-regular gamblers, and non-gamblers were discussed in the previous chapter (refer to Table 2.1), the focus here is on the problem gamblers as identified by the SOGS.

Problem gamblers (SOGS 5+) were *over-represented* within:

- those from a non-English speaking background
- households with an income of less than $20,000 pa.
- the Indigenous population
- those educated with some primary or secondary schooling.

Problem gamblers (SOGS 5+) were *under-represented* within:

- households with an income from $80,000 to $99,999
- those educated to tertiary level
- people working part time.

Compared with the average NT resident, it is evident that individuals from households where English was not the primary language are four times as likely to be problem gamblers, people in low-income households are three times as likely to be problem gamblers, while individuals who identify as Indigenous are twice as likely to be problem gamblers compared to the average NT resident. In addition, people educated

to primary school level only were more likely to be problem gamblers. Conversely, better educated individuals were less likely to be problem gamblers compared to the average. Thus, ethnicity, income, and education are important in discriminating problem gamblers from others.

Table 3.4: Prevalence (percentage) of SOGS problem gamblers in the NT and in different socio-demographic groups

	SOGS problem gambler	Regular non-problem gambler	Non-regular gambler	Non-gambler	Total number
	Lower – Upper Bounds (%)	Lower – Upper Bounds (%)	Lower – Upper Bounds (%)	Lower – Upper Bounds (%)	of people (N)
All NT	**0.89 - 1.25**	**5.9 - 6.9**	**64.1 – 67.0**	**25.6 - 28.3**	**138,225**
Gender[1]					
Male	0.99 - 1.58	8.0 - 9.7	61.8 - 66.1	24.1 - 27.8	71,415
Female	0.63 - 1.05	3.4 - 4.3	65.3 - 69.2	26.2 - 29.9	66,810
Age[1]					
18-24 yrs	0.31 - 1.14	5.5 - 9.2	61.6 - 72.0	20.3 - 30.0	20,163
25-34 yrs	0.43 - 1.17	4.5 - 6.6	60.8 - 67.4	26.5 - 32.6	33,296
35-44 yrs	0.65 - 1.26	4.5 - 6.0	64.4 - 69.2	24.8 - 29.3	29,538
45-54 yrs	0.89 - 1.55	5.0 - 6.6	65.1 - 70.2	22.9 - 27.7	31,264
55+ yrs	1.03 - 2.31	7.8 - 10.4	59.2 - 65.1	24.4 - 29.7	23,963
Indigenous status[2]					
Indigenous	**1.27 - 3.35**	2.7 - 5.4	56.6 - 69.4	24.5 - 36.7	14,491
Non-Indigenous or refused	0.77 - 1.10	6.0 - 7.1	64.5 - 67.3	25.3 - 27.9	122,404
Country of birth[2]					
Australia	0.86 - 1.29	5.7 - 6.9	64.9 - 68.2	24.6 - 27.6	111,664
Other country	0.76 - 1.43	5.3 - 7.3	58.4 - 64.3	28.4 - 34.1	25,231
Main language spoken at home					
English	0.66 - 1.16	6.3 - 6.8	65.8 - 66.1	26.4 - 26.8	130,467
Non-English	**3.37 - 5.56**	**0.2 - 2.4**	**57.2 - 58.6**	**35.5 - 37.3**	6,428
Marital status[2]					
Married or living with a partner	0.90 - 1.40	5.6 - 6.8	63.6 - 67.0	25.8 - 29.0	91,026
Separated or divorced	0.70 - 1.66	6.1 - 9.3	64.1 - 71.5	20.0 - 26.6	9,519
Widowed	0.00 - 1.11	6.5 - 13.1	59.8 - 73.7	17.0 - 28.8	2,130
Single	0.60 - 1.23	5.1 - 7.2	62.4 - 69.2	24.0 - 30.2	33,899
Household type[2]					
Single Person	0.54 - 1.32	5.3 - 7.9	64.4 - 71.3	21.6 - 27.7	18,014
One parent family with children	0.72 - 2.04	3.1 - 6.1	70.7 - 81.0	13.9 - 22.4	8,416
Couple with children	0.68 - 1.29	4.0 - 5.1	63.9 - 68.0	26.6 - 30.4	54,564
Couple with no children	0.67 - 1.26	6.5 - 8.5	65.9 - 71.3	20.5 - 25.3	36,996
Group household	0.91 - 2.55	7.4 - 12.2	42.1 - 53.5	34.8 - 46.6	14,020
Highest level of education[3]					
Primary & below	**1.12 - 2.24**	5.2 - 7.5	66.4 - 72.5	19.8 - 25.3	30,842
Some secondary	1.13 - 1.88	7.1 - 9.1	65.0 - 70.5	20.1 - 25.3	44,566
Some tertiary	0.34 - 0.96	5.8 - 8.1	59.1 - 65.7	27.0 - 33.0	17,731
Some university	**0.26 - 0.55**	3.6 - 5.0	59.8 - 65.0	30.5 - 35.4	42,970
Household income[4]					
Less than $20,000	**1.29 - 3.07**	4.2 - 6.6	63.8 - 70.2	22.6 - 28.3	18,665
$20,000-$39,999	0.60 - 1.36	5.4 - 7.5	66.9 - 73.2	**19.7 - 25.4**	25,375
$40,000-$59,999	0.72 - 1.28	5.3 - 7.4	64.8 - 70.7	22.1 - 27.8	35,361
$60,000-$79,999	0.30 - 1.16	5.1 - 7.5	63.0 - 69.3	23.9 - 29.8	18,923
$80,000-$99,999	**0.00 - 0.93**	**8.7 - 14.9**	62.1 - 74.2	**15.0 - 24.2**	8,246
$100,000 or more	1.01 - 2.79	**7.8 - 13.3**	65.2 - 75.2	**13.7 - 21.0**	8,230
Labour force status[5]					
Working full-time	0.86 - 1.26	6.2 - 7.5	63.9 - 67.4	24.7 - 28.1	93,933
Working part-time	**0.24 - 0.78**	3.4 - 5.2	63.0 - 70.2	25.2 - 32.0	16,849
Home Duties	0.78 - 3.50	1.7 - 4.4	58.5 - 69.0	26.0 - 36.1	7,352
Student	0.17 - 1.13	1.7 - 7.9	56.5 - 75.8	19.0 - 37.8	4,282

	SOGS problem gambler	Regular non-problem gambler	Non-regular gambler	Non-gambler	Total number of people (N)
	Lower – Upper Bounds (%)	Lower – Upper Bounds (%)	Lower – Upper Bounds (%)	Lower – Upper Bounds (%)	
Retired (Self-supporting)	0.75 - 5.11	6.1 - 10.5	50.1 - 62.1	27.2 - 38.2	5,739
Pensioner	0.00 - 1.13	5.2 - 9.8	64.1 - 76.7	16.2 - 26.9	4,195
Unemployed/looking for work	0.00 - 1.27	1.6 - 6.6	73.8 - 88.8	7.8 - 20.1	3,224

Notes: 1) Midpoints for percentage ranges may not total to 100% across rows due to rounding. Population totals may not add to 138,225 in all socio-demographic variables due to missing data (see below). 2) The total number of people represents weighted survey data. 3) For unweighted data tables refer to Appendix G. 4) [1] Population total is 138,225; [2] Population total is 136,895; [3] Population total is 136,818; [4] Population total is 118,839; [5] Population total is 136,874.

3.5 Identifying Risk Factors for the Problem Gambler Profile

So far, this chapter has presented information showing the prevalence of problem gambling in the context of socio-demographic variables. However, risk factors for problem gambling profiles are inter-correlated (e.g. income, ethnicity and education). It is important to find out just which combination of variables best predicts problem gamblers, and this requires some disentanglement to isolate the unique contribution that each variable is making to the analysis. Therefore, this section will explore the risk factors that may show more clearly what the effect of one of these variables may be when all the other variables are held constant.

This shift entails the use of a multivariate rather than a bivariate methodology. The multivariate method is used widely in medical research in order to identify the risk factors for a certain disease when all risk factors may be co-present in a population. This analysis can determine which of the variables is making independent association with problem gambling. It can also help to compare and contrast the pattern of risk factors for each of the two main player profiles: problem and regular gamblers.

In this section, three questions are explored using a multivariate logistic regression technique that analyses the unweighted data set (n=1,873, reduced to 1,867 for these analyses because of some missing values), rather than the weighted set used so far for the cross-tabulated data. Three main research questions are posed:

3.5.1 Which categories of all the background variables listed so far are most closely associated with problem gambling?

3.5.2 What are the differences in the patterns of predicting problem, as distinct from regular, gambling profiles?

3.5.3 What effect does poker machine gambling have in mediating (accentuating or reducing) the effect of a player's background characteristics on their player profile?

The following sections present the results of four separate multivariate logistic regression models. The first set of results shows which regional, socio-demographic and socioeconomic variables were significant in predicting SOGS problem gamblers and regular gamblers. The second set of results includes the same regional, socio-demographic and socioeconomic variables, but includes a variable for whether the person played a poker machine in the last 12 months. Odds ratios are presented and the variance explained by the explanatory variables in predicting gambler type using

McFadden's R Square value (while not being strictly the variance explained, higher values indicate better explanatory power). The odds ratio is a measure of association in which a value of '1.0' means that there is no relationship between variables. The value of an odds ratio can be less than or greater than one. The size of any relationship is measured by the difference (in either direction) from one. An odds ratio less than one indicates an inverse or negative association. An odds ratio greater than one indicates a positive association (e.g. an odds ratio of 3.00 indicates that the odds of something are 3 times (or 300%) more likely, while an odds ratio of 0.50 indicates the odds of something occurring are reduced by 50%).

3.5.1 Identifying the 'risky' categories

In order to identify which of the categories for each variable appeared to matter most in predicting either a problem or a regular player profile, each of the variables was submitted to a rigorous contrastive analysis in which each category (e.g. 'married or living with a partner' in the Marital Status variable) was made into a separate (dummy) variable. This was an exhaustive exercise, resulting in some unexpected findings. For example, it appeared that income was a predictor of both profiles but that this only mattered for household incomes less than $20,000 p.a. for problem gamblers and $80,000 p.a. or more for regular gamblers.

There were many examples of these 'non-linear' effects, which are often disguised in simple two-variable measures of association. This resulted in the following variables being selected for the multivariate analysis (all were recoded so that they were scored '1' for a positive answer for an identified risk factor, and '0' for the alternative or negative answer) (see Table 3.5 & 3.6).

Table 3.5: Univariate unadjusted risk factors for 'SOGS problem' gambler profile

Risk Factor	Description	Effect Direction
Gambling Activity:	Played EGM or poker machines in last 12 months	Increase
Indigenous Status:	Indigenous	Increase
Main Household Language:	Non-English Speaking	Increase
Highest Educational Level:	Some primary	Increase
	Some secondary	Increase
Household Income:	Less than $20,000 p.a.	Increase
Household type:	Single parent with children households	Increase
	Group households	Increase

Table 3.6: Univariate unadjusted risk factors for 'regular' gambler profile

Risk Factor	Description	Effect Direction
Gambling Activity:	Played EGM or poker machines in last 12 months	Increase
Region (two variables):	Alive Springs	Reduce
	Rest of NT	Reduce
Gender:	Male	Increase
Age:	25 to 34 years	Increase
	35 to 44 years	Increase
Indigenous Status:	Indigenous	Increase
Main Household Language:	Non-English Speaking	Increase

Risk Factor	Description	Effect Direction
Highest Educational Level:	Some Primary	Increase
	Some secondary	Increase
	Some Tertiary (not university)	Increase
Household Income:	$80,000 or more p.a.	Increase
Labour force status:	Working part time	Reduce
	Home duties	Reduce
Household type:	Single parent with children households	Increase
	Group households	Increase

It is significant that the following variables were not included since they had no independent clear predictive power in identifying either of the two gambler profiles: Marital Status and Source of Household Income (though unemployment benefit was a predictor of overall gambler profile).

3.5.2 Comparing predictive patterns: problem and regular gambling profiles

These variables were all introduced into a logistic regression model which estimates the relative strength of each of the above predictors. For this analysis, it is important to know whether a predicted effect is statistically significant or not while controlling for other predictors. The results for this analysis are shown in Table 3.7. This analysis of the (unweighted) prevalence survey data shows that the pattern of prediction for problem gamblers is almost a mirror image of regular gamblers. What is a significant predictor for the problem gambler seems to be non-significant for the regular gambler, and vice versa. This is an interesting finding, since it shows that the definition of the risk factors for the problem gambler profile may be more elusive, not only since it is a much smaller category, but also because it may be hidden within the general body of regular gamblers.

Table 3.7: Comparison of logistic regression results for predicting regular gamblers and SOGS problem gamblers

	SOGS Problem gamblers (n$_{SPG}$=54)		Regular Gamblers (n$_{RG}$=367)	
	Odds Ratio (95% CI)	Effect Direction	Odds Ratio (95% CI)	Effect Direction
Regions				
Darwin	-	-	0.91 (0.59 - 1.39)	ns
Alice Springs	-	-	0.68 (0.40 - 1.13)	ns
Rest of the NT	-	-	0.58 (0.34 - 1.00)	Reduce
Tennant Creek/Nhulunbuy	-	-	1.00	-
Sex				
Males	-	-	1.76 (1.35 - 2.28)	Increase
Females	-	-	1.00	-
Age				
18-24 years	-	-	1.62 (0.97 - 2.72)	Increase
25-34 years	-	-	1.00	-
35-44 years			1.09 (0.74 - 1.63)	-
45-54 years			2.21 (0.82 - 1.77)	-
55+ years	-	-	1.65 (1.11 - 2.45)	Increase
Language spoken at home				
Non-English speaking	3.33 (1.28 - 8.68)	Increase	-	-
English speaker	1.00	-	-	-
Indigenous status				
Indigenous	2.56 (1.19 - 5.52)	Increase	-	-

	SOGS Problem gamblers (n$_{SPG}$=54)		Regular Gamblers (n$_{RG}$=367)	
	Odds Ratio (95% CI)	Effect Direction	Odds Ratio (95% CI)	Effect Direction
Non-Indigenous	1.00	-	-	-
Education attainment				
Primary school & below	2.34 (0.97 - 5.63)	Increase	1.92 (1.32 - 2.79)	Increase
Some secondary school	3.05 (1.37 - 6.82)	Increase	2.81 (2.01 - 3.92)	Increase
Some tertiary	1.23 (0.41 - 3.75)	ns	1.64 (1.10 - 2.45)	Increase
Some university	1.00	-	1.00	-
Household income p.a.				
Less than $20,000	2.00 (0.62 - 6.46)	ns	1.02 (0.62 - 1.66)	ns
$20,000 - $39,999	1.16 (0.35 - 3.91)	ns	1.26 (0.81 - 1.96)	ns
$40,000 - $59,999	2.10 (0.69 - 6.42)	ns	1.17 (0.78 - 1.77)	ns
$60,000 - $79,999	1.00	-	1.00	-
$80,000 - $99,999	0.58 (0.06 - 5.28)	ns	1.92 (1.11 - 3.31)	Increase
$100,000 or more	4.12 (1.13 - 15.1)	Increase	2.14 (1.25 - 3.66)	Increase
Don't know income	0.94 (0.26 - 3.45)	ns	0.54 (0.33 - 0.90)	Decrease
Household type				
Couple with children	-	-	1.00	-
Single person with children	-	-	1.47 (0.89 - 2.44)	ns
Single person	-	-	1.27 (0.90 - 1.81)	ns
Couple with no children	-	-	1.63 (1.18 - 2.26)	Increase
Group / share	-	-	2.02 (1.24 - 3.27)	Increase
Other households	-	-	1.33 (0.64 - 2.74)	ns

Notes: 1) ns – not significant. 2) *McFadden's R Square for problem gamblers = 6.6%.* 3) *McFadden's R Square for regular gamblers = 7.5%.* 4) n=1,858 for both analyses (regular gamblers = 19.7% of total, SOGS problem gamblers = 2.9%). 5) dashes indicate that variable dropped out in backward elimination process.

Of particular significance when interpreting logistic regression is the amount of variation explained by the explanatory variables on the variable of interest (i.e. problem gamblers and regular gamblers). For problem gamblers the set of explanatory variables explained 6.6% of the variation, while for regular gamblers, the explanatory variables explained 7.5% of the variation. These are relatively small amounts of variance explained and any effects shown by odds ratios in Table 3.7 exert minimal effect because of the small amount of variance explained. However, it is useful to explore patterns within the explained variation.

Rather than being a list of risk factors identifying the regular gambler in a more intensive or exaggerated form, the risk profile for the problem gambler is in fact almost its diametrical opposite. For example, the regular gambler tends to be older and male and yet these characteristics are not over-represented in the problem gambler category. Conversely, the regional, Indigenous, linguistic, and educational predictors of the problem gambler profile are not helpful in predicting who is (or might be) a problem gambler. This finding has profound implications for policies which attempt to minimise the risk of social harm from easier access to poker machine gambling since it suggests that other factors may exist in addition to exposure to gambling that create problem gambling. The analyses suggest that problem gamblers are somehow different to regular gamblers, in terms of their social and economic circumstances and their cultural and linguistic identities. The one exception to this are households in the higher income brackets, which were more likely to be regular and problem gamblers.

Despite approximately 60% of the Indigenous people not being in scope of the survey because they don't own telephones, the results presented here suggest that being an Indigenous person is an independent risk factor for predicting problem gambling. The results suggest that if you are an Indigenous person with a home phone (which means the more affluent, urban dwelling Indigenous people) you have a higher risk than other Territorians of being a problem gambler. However, see the analysis in the next section assessing the effect of playing poker machines and the results using the CPGI screen (Appendix I), which do not confirm this result.

The regional factors are also of interest. Residents of Darwin and Alice Springs are proximate to multiple gambling venues including the Territory's two casinos. Although the effect of proximity is speculative at this stage (i.e. results were approaching statistical significance), there appears to exist an urban effect (i.e. the Rest of NT seems to have lower prevalence than the urban centres) on regular gambling prevalence that warrants further research.

3.5.3 Gambler profile prediction and poker machines

Because gambling profiles are the result of many more factors than those used in the previous models, it is important to explore the effect of actual gambling activity itself. In this case, since the changes in the policy environment have centred largely on the introduction of poker machines into community venues, exposure to this activity will be included in the next set of models predicting player profiles. Table 3.8 shows the effect of at least one poker machine session in the twelve months preceding the telephone interview on the configuration of the predictive patterns for each profile type.

From Table 3.8 it is apparent that the introduction of the poker machine activity variable into the logistic regression has changed aspects of the predictive pattern, particularly for problem gamblers, however, aspects of the 'reverse' image pattern still remain. The most obvious aspect of the introduction of poker machine activity is the great improvement in variance explained from around 6%-8% in the profile without the poker machine variable to around 25% when included. This increase is an important, though not a very surprising finding, since poker machine playing has been widely associated with the prevalence of problem gambling and is associated with the definition of problem gambling. What is of significance here is the resilience of the variable main language spoken at home being non-English in predicting the problem gambler profile. However, it is important to note that Indigenous status, educational attainment and income all became non-significant with the introduction of poker machine playing. The same could be said of the continuing importance of male gender and age 55 years and over, educational attainment, income and household type which retain their statistical significance in predicting regular gamblers.

Table 3.8: Comparison of logistic regression results for predicting regular gamblers and SOGS problem gamblers with played pokies included

	SOGS Problem gamblers (n_{SPG}=54)		Regular Gamblers (n_{RG}=367)	
	Odds Ratio (95% CI)	Effect Direction	Odds Ratio (95% CI)	Effect Direction
Played pokies in last 12 months	55.63 (16.79 - 184.3)	Increase	13.20 (9.91 - 17.6)	Increase
Sex				

	SOGS Problem gamblers (n$_{SPG}$=54)		Regular Gamblers (n$_{RG}$=367)	
	Odds Ratio (95% CI)	Effect Direction	Odds Ratio (95% CI)	Effect Direction
Males	-	-	2.27 (1.67 - 3.08)	Increase
Females	-	-	1.00	
Age				
25-34 years	-	-	1.00	-
55+ years	-	-	2.03 (1.29 - 3.19)	Increase
Language spoken at home				
Non-English speaking	9.35 (3.11-28.06)	Increase	-	-
English speaker	1.00		-	-
Education attainment				
Primary school & below	-	-	1.57 (1.03 - 2.38)	Increase
Some secondary school	-	-	2.12 (1.45 - 3.08)	Increase
Some university	-	-	1.00	-
Household income p.a.				
$60,000 - $79,999	-	-	1.00	-
$80,000 - $99,999	-	-	2.14 (1.14 - 4.03)	Increase
$100,000 or more	-	-	2.30 (1.24 - 4.29)	Increase
Household type				
Couple with children	-	-	1.00	-
Couple with no children	-	-	1.57 (1.09 - 2.26)	Increase
Group / share	-	-	2.10 (1.19 - 3.70)	Increase

Notes: 1) *McFadden's R Square for problem gamblers = 24.6%.* 2) *McFadden's R Square for regular gamblers = 27.3%.* 3) n=1,866 for both analyses (regular gamblers = 19.7% of total, SOGS problem gamblers = 2.9%). 4) All categories of all stated variables were included in all models, but for ease of reading only categories that were significant to either problem gamblers or regular gamblers are present in the above table.

Clearly, the poker machine activity has absorbed the effect of some of the other variables, such as Indigenous identity and primary schooling, as it has an overwhelming effect on the predictive power of the total model for each gambler type. It is interesting to note that the regional variables became non-significant for regular gamblers with the introduction of pokies in predicting the regular gambler profile. Presumably, this is a reflection of the relative attractions of poker machines as opposed to other forms of gambling in Alice Springs.

3.5.4 Summary

While confirming many of the findings of the previous sections, this analysis has highlighted some surprising patterns of risk factors associated with both problem and regular gambler profiles. The most important finding is shown up by the 'mirror image' of the patterning of significant predictors in Table 3.7. This reveals a reversal in the identification of those factors which predict problem, as distinct from regular, gambler profiles (except for households on high incomes).

This interplay between the causal background of these two gambler profiles is to some extent disrupted when mediated by poker machine activity. However, some important socio-demographic variables (age and male gender for regular gamblers) and socio-economic and cultural variables (education, income and non-English speaking background for regular gamblers) retain a significant effect. More research is obviously needed here to tease out the levels of exposure to poker machines, as well as a great deal more thought about what may be driving the over-representation of certain categories among the small, but very important, problem gambling profile.

So far this chapter has looked at the prevalence of problem gambling in the NT and regions, compared these estimates with other jurisdictions, identified the population subgroups in which problem gamblers are over-represented, and identified the risk factors for problem gambling. The final three sections examine gambling participation by problem gamblers as a group, as well as when separated on the basis of gender and age.

3.6 Problem Gamblers and Gambling Participation

The purpose of this section is to identify which gambling activities are most closely associated with problem gambling. It will therefore focus on the gambling participation of problem gamblers in comparison to other gamblers, both regular and non-regular, gamblers (i.e. those who gambled but did not have a gambling problem according to the SOGS). As set in out in Figure 3.3, problem gamblers participated more frequently than other gamblers in only two activities: playing the pokies and playing card games privately for money. Around 90% problem gamblers played the pokies compared to 65% of regular gamblers and just over 30% of non-regular gamblers. The finding that over one-quarter of problem gamblers participated in private gambling games, double the rate for regular gamblers, is of interest. Obviously, a proportion of gambling behaviour is expressed outside of regulated or commercial gambling space, and the relationships between private and public gambling are worth further exploration.

Figure 3.3: Gambling activities engaged in by SOGS problem gamblers (N=1,478), regular gamblers (N=8,881), and non-regular gamblers (N=90,583)
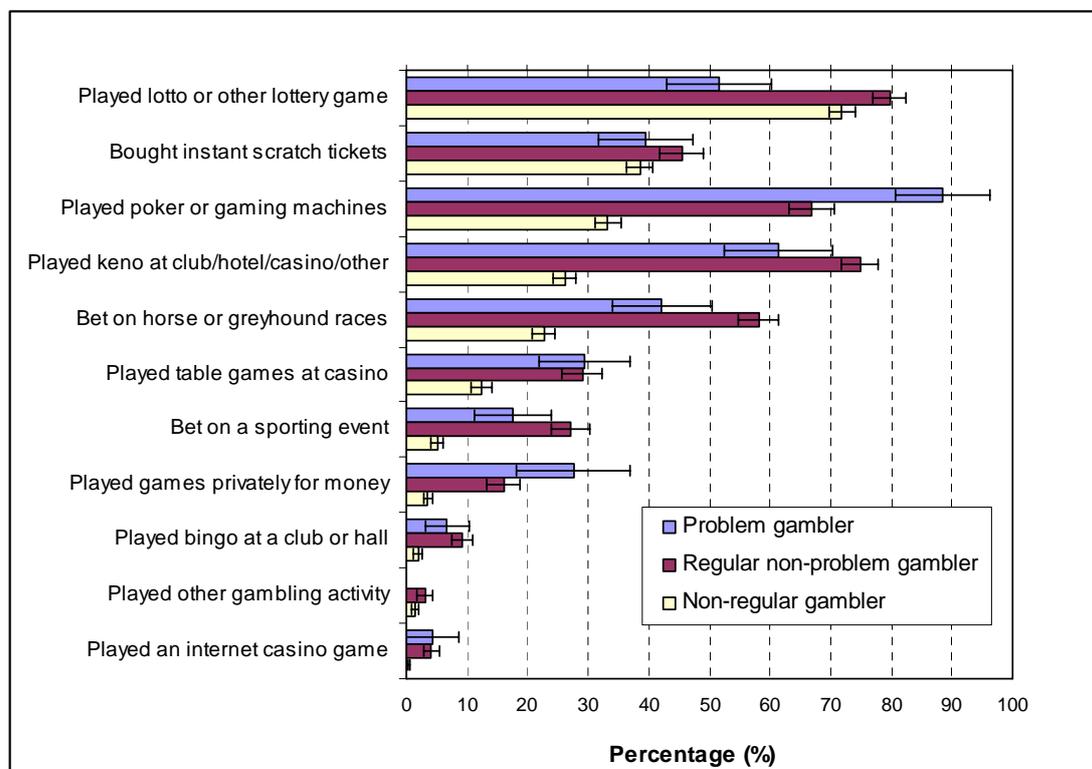
3.7 Problem Gambling, Gambling Participation and Gender

There are more males than female problem gamblers in the NT. Of the 1,497 problem gamblers, 934 (62.4%) were men and 563 (37.6%) were women. However, there were differences between male and female problem gamblers in their gambling preferences. Figure 3.4 shows the proportions of male and female problem gamblers who gambled in each activity in the previous 12 months. The general pattern of participation is obviously similar to the pattern described in Figure 3.3. However there were some statistically significant differences in participation between male and female problem gamblers. Female problem gamblers were more likely to purchase scratch tickets and play lotto or other lottery games, while their male counterparts were more likely to play casino games on the internet, and bet on a sporting event. Apart from these differences the participation profile was quite similar.

Figure 3.4: Gambling activities engaged in by SOGS problem gamblers for males (N=715) and females (N=763)
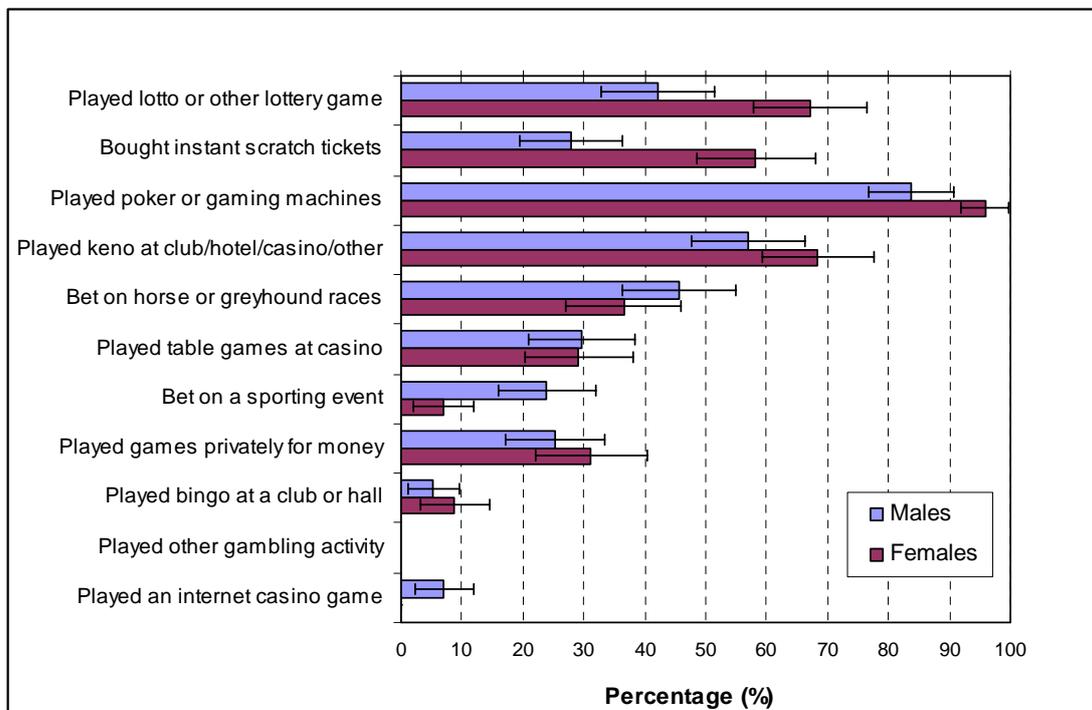
Notes: 1) Standard errors for this figure are calculated on unweighted data due to statistical program error. 2) Only male problem gamblers played Internet casino games.

3.8 Problem Gambling, Gambling Participation and Age

Gambling participation by problem gamblers also varied according to age. Different age groups exhibited different patterns in their gambling activity for all activities except for playing poker machines, which was the preferred activity across all age groups of problem gamblers (refer to Figure 3.5). All problem gamblers aged 18–34 played poker machines. Younger problem gamblers (aged 18–24) hardly participated at all in lotto and buying instant scratch tickets, which were more popular with older problem gamblers. Younger problem gamblers were also less likely to participate in

keno, but were more likely to participate in playing table games and to bet on a sporting event.

As with the younger group, all problem gamblers aged 25–34 played poker machines. The 25–34 year olds were less likely to play lotteries and buy scratch-tickets than the older group, but otherwise were similar in their participation levels for all other activities with one exception. Specifically, 25–34 year olds were the only age group to play casino games on the internet, with approximately one quarter gambling in this way. Problem gamblers aged 35–44 participated more consistently in the range of available activities: over 90% played poker machines; two-thirds played keno; and well over half played lotto (61%), bought instant scratch tickets (59%), and played table games at a casino (55%). This pattern was also evident in the 45–54 year age group with high rates of participation in playing poker machines (93%) and playing keno (81%). Approximately half the problem gamblers in this age group bet on horse or greyhound races (54.4%) or bought instant scratch tickets (46.4%). Although problem gamblers aged 55 and older did not display the highest rates of participation for any gambling activity, they played lotto and games privately for money at almost similar rates to the highest rates, which were 69.0% and 42% respectively.

Figure 3.5: Gambling activities engaged in by SOGS problem gamblers for age groups: 18–24 yrs (N=147), 25–34 yrs (N=266), 35–44 yrs (N=283), 45–54 yrs (N=382), and 55 or more yrs (N=400)
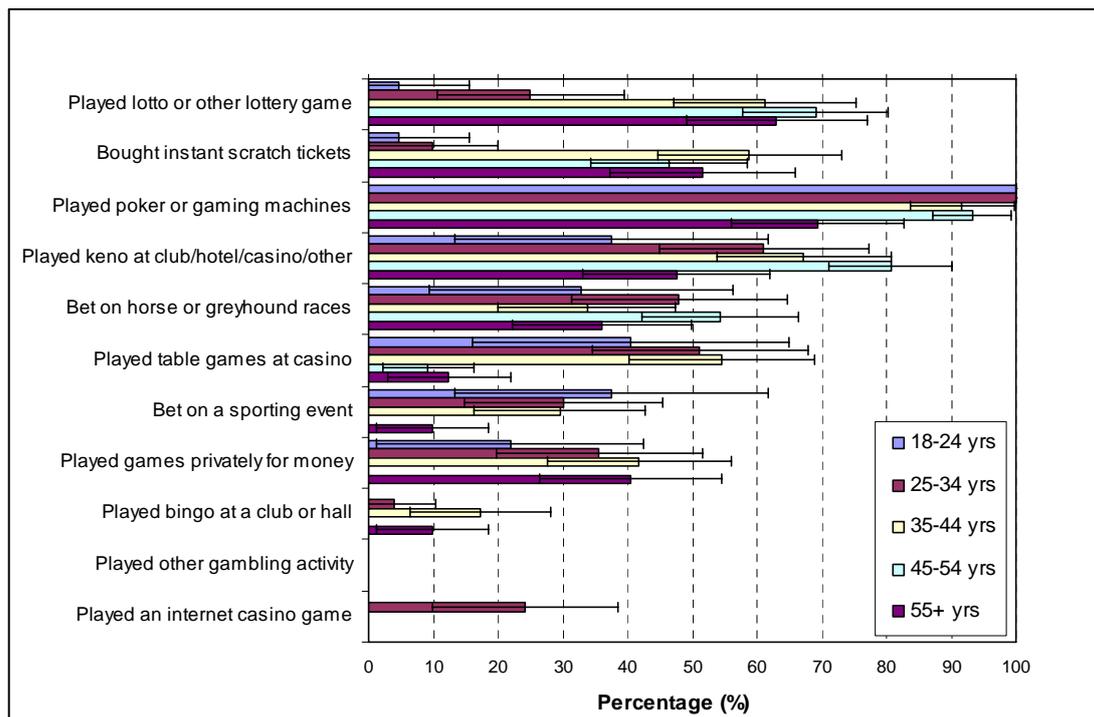
Note: Standard errors are calculated on unweighted data due to statistical program error.

To summarise the general gambling pattern in relation to age, older problem gamblers were more likely to participate in a range of activities at a higher frequency than younger problem gamblers. Younger problem gamblers were more likely to play poker machines (although participation rates were very high for all groups), play table games at a casino, and engage in sports betting. Only 25–34 year olds played casino games on the internet.

3.9 Comparison of Problem Gambling Screens – SOGS and CPGI

Both the SOGS and the CPGI provide an estimate of the prevalence of problem gambling within the NT population; that is, the percentage of individuals within the adult resident population who are categorised as problem gamblers. However, because the screens use different questions to assess problem gambling (Appendix E) they categorise a slightly different group of individuals. In other words, an individual defined as a problem gambler by the SOGS may not be defined as such by the CPGI. As presented in the previous chapter, the population prevalence estimates of problem gambling by the SOGS and the CPGI are indeed different. The SOGS 5+ provided a prevalence estimate of 1.06% with a 95% confidence interval of between 0.73% and 1.43%. The CPGI 8+ provided a lower estimate of problem gambling at 0.64% of the NT population with a 95% confidence interval of between 0.40% and 0.88%. Therefore, it is necessary to compare the screens to determine both the extent of the overlap and the extent to which they categorise the same individuals. This is important not only because prevalence estimates can vary significantly, but also because accurate analysis of problem gamblers as a subgroup depends on an accurate and reliable definition.

3.9.1 Distribution of SOGS and CPGI scores

Figures 3.6 and 3.7 illustrate the distribution of the SOGS and CPGI scores respectively. The scores to the left of the arrows on the graphs represent individuals who answered positively to some questions, but too few to be labelled a problem gambler. All those scores to the right of the respective thresholds indicate individuals who were defined as problem gamblers. Both these graphs illustrate a rapid decline in cumulative percentage of gamblers as the number of positive scores increase. These curves illustrate that there is no 'correct' or absolute threshold, and that individuals display different degrees of severity of gambling related problems. For the SOGS, the cut-off of 5 appears appropriate in the context of the shape of the curve as this point represents a natural valley at the base of the declining curve. At this point 14.6% of regular gamblers are classified as problem gamblers. However, the curve does then bulge again significantly before levelling into a sustained shallow decline.

Figure 3.6: Distribution of SOGS scores for regular gamblers (n=369)
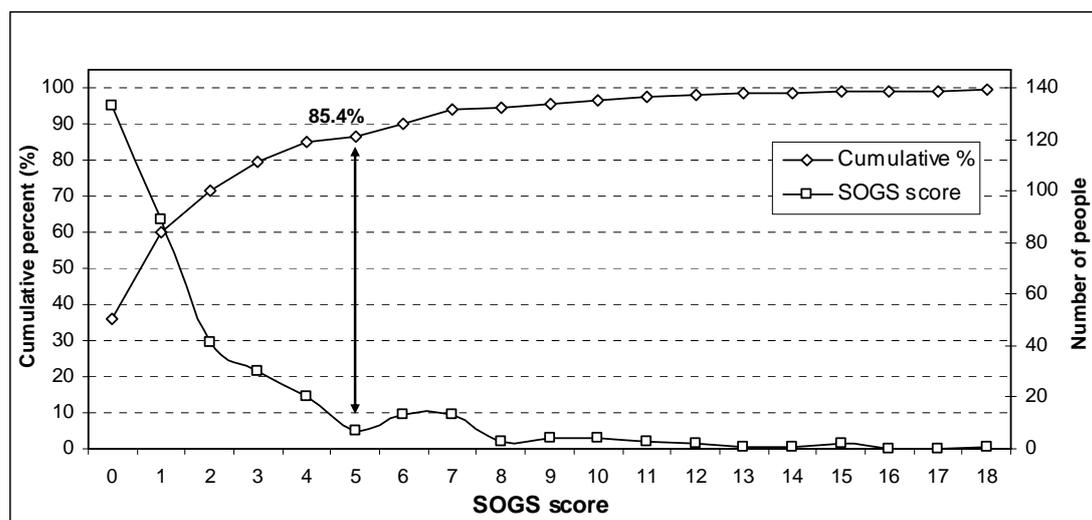
Note: Scores of 5 or more indicate problem gambling.

When this shape is compared with the CPGI curve, it is evident that the CPGI follows a similar shape with a steep decline, a valley and then a rise before a subsequent decline. However, the recommended CPGI cut-off at 8+ occurs at the end of the small bulge as opposed to the start as with the SOGS. This indicates the CPGI is classifying fewer regular gamblers than the SOGS as problem gamblers.

Figure 3.7: Distribution of CPGI scores for regular gamblers (n=369)
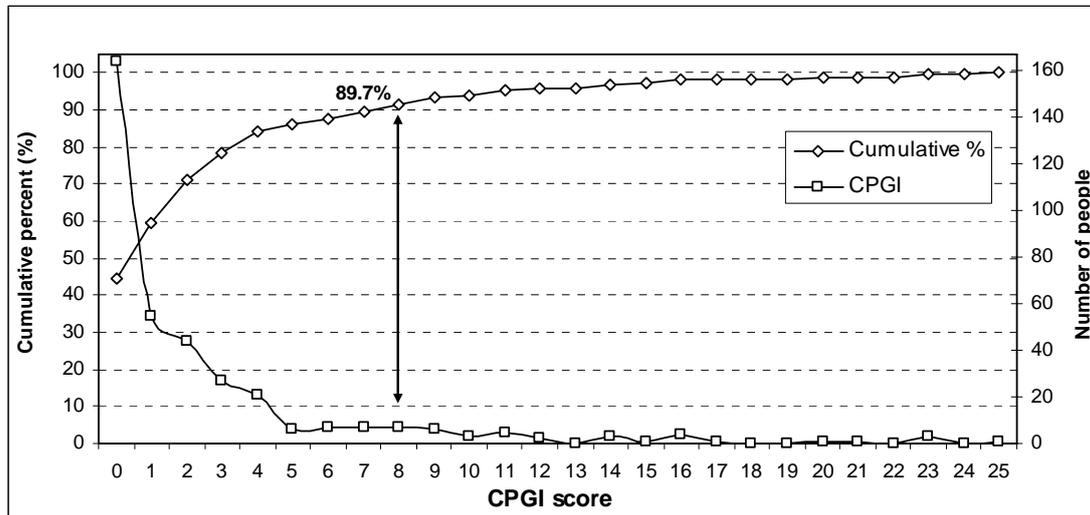
Note: Scores of 8 or more indicate problem gambling.

3.9.2 Comparison of gambling screens – the SOGS and CPGI

The primary issue when comparing the screens is the degree to which they classify the same cases as problem gamblers. Table 3.9 presents a cross-tabulation of the SOGS and CPGI classification results. The distribution of the actual respective individual scores is provided by the scatter plot in Figure 3.8. Both use unweighted data; that is, each point represents an individual regular gambler.

The SOGS classified 14.6% (54 out of 369) of regular gamblers as problem gamblers. These problem gamblers are represented in quadrants III and IV of Figure 3.8. In comparison, the CPGI classified 10.3% (38 out of 369) of regular gamblers as problem gamblers (quadrants II and III in Figure 3.8). The problem gamblers identified by both screens are represented in Quadrant III. The CPGI picked up only 64.8% (35 from 54) of the gamblers identified by the SOGS as problem gamblers, while the SOGS picked up 92.1% (35 from 38) of the gamblers identified by the CPGI as problem gamblers. This means the SOGS classified approximately 40% more regular gamblers as problem gamblers compared with the CPGI which represents an approximate 30% reduction in the prevalence of problem gambling when using the CPGI (8+) screen.

Table 3.9: Classification by different gambling screens for regular gamblers using unweighted data

		SOGS (5+)			
		Not a problem gambler	Problem gambler	Total	Percentage CPGI
CPGI (8+)	Not a problem gambler	312	19	**331**	*89.7*
	Problem gambler	3	35	**38**	*10.3*
	Total	**315**	**54**	369	*100.0*
	Percentage SOGS	*85.4*	*14.6*	*100.0*	

Figure 3.8: Scatter plot of CPGI and SOGS scores (n=369)
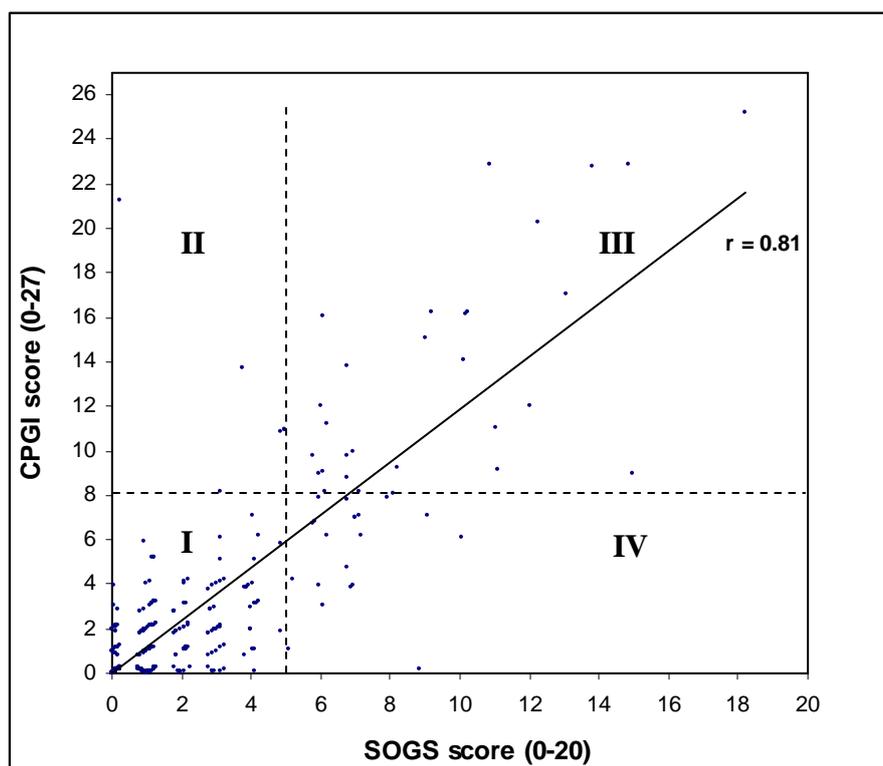
Notes: 1) Points have been randomly perturbed for better visualisation of smaller scores. 2) Unweighted data used to generate where both scores had complete data.

The higher prevalence of problem gambling identified by the SOGS is consistent with other studies estimating problem gambling prevalence (Battersby, Thomas et al. 2002). Results from the Victorian survey show a slightly higher rate for the CPGI in Australian use, but not as much of a difference as displayed here (0.97 CPGI compared to 1.12 SOGS). Why the NT results should display a greater divergence is unclear. Exploring the reasons for this difference on a case by case basis is required to tease this out, and is part of the future work recommended by this report.

Of equal or greater importance than the prevalence estimate is the composition of those classified as problem gamblers by the respective screens. Appendix I replicates the main prevalence results using the CPGI. The most important feature of the CPGI prevalence results (Appendix I) is that the CPGI, because it classifies a different

group of individuals, provides a different profile of the problem gambler. The main variables of interest are provided below.

Problem gamblers (CPGI 8+) were *over-represented* within:

- households with an income of less than $20,000 pa.
- group households.

Problem gamblers (CPGI 8+) were *under-represented* within:

- households with an income more than $60,000 pa.
- 25–34 year olds
- couples with no children
- those educated to tertiary level.

Household income and to a lesser extent education remain as significant defining variables (compared with the SOGS profile). Importantly, non-English speaking background and Indigenous identity are no longer significant characteristics of the problem gambler. This suggests that the SOGS is classifying Indigenous respondents that the CPGI is not. The fact that one screen suggests Indigenous people (and to a lesser degree non-English speakers) are at greater risk of being problem gamblers while the another does not has direct and serious consequences for policy and potential intervention. The obvious question to ask is: which screen, if either, is more valid? Previous research, particularly by Wenzel, McMillen et al. (2004), found the CPGI to be the superior instrument. Before a similar conclusion can be drawn for the NT context, more comparative analysis of the screens needs to be undertaken. This work will determine if particular items in the SOGS are positively classifying Indigenous individuals more frequently than others. In other words, it will determine if particular questions in the SOGS are unsuitable for cross-cultural assessment of problem gambling.

Until this further research is completed it is suggested that, for consistency with other recent recommendations, the CPGI be used as the future screening instrument for the NT. This recommendation finds support in the validation study by Wenzel, McMillen et al. (2004) in its use by prevalence studies in other jurisdictions (particularly Queensland which has similar problem gambling levels to the NT), and in the recommendation by the Ministerial Council on Gambling (see South Australian Centre for Economic Studies and Department of Psychology University of Adelaide 2005). This in no way invalidates the previous discussion of problem gambling based on the SOGS+ definition. The SOGS was used for its comparability with the Productivity Commission's national results and to enable comparison between the NT prevalence estimates and other jurisdictional studies.

Use of both gambling screens in this sense has proved of enormous benefit to the general value of the results presented in this report. However, the differences between the screens suggest that the profile of the problem gambler presented in this chapter on the basis of SOGS5+ should be interpreted with some caution. This is particularly the case for the over-representation of Indigenous people and those from non-English speaking backgrounds. There are two variables which do appear strongly in both the SOGS and CPGI problem gambler profiles. These are income and education. Both profiles found that problem gamblers were over-represented in low income groups

(household income below $20,000 p.a.), and both found an association between low formal educational achievement and problem gambling (or conversely high educational achievement and reduced problem gambling). In terms of policy these variables are fundamental and will be relatively common amongst Indigenous people and non-English speakers. However, more research of Indigenous and non-English speaking residents and gambling issues needs to be conducted before any similar conclusions may be drawn.

4.   Expenditure on Gambling

4.1 Introduction

In an effort to provide a measure of gambling expenditure by the NT population, the survey interviewers asked identified gamblers a series of questions about their expenditure on gambling (see Appendix F). The questions were designed in line with the Productivity Commission's 1999 survey and were asked of all gamblers and for each gambling activity the respondents had engaged during the last 12 months. The questions focussed on the dollar amount the respondent usually gambled, including any additional money withdrawn or borrowed during the period of play, and the dollar amount the respondent usually had left when they had finished gambling. If respondents were unable to provide an amount or an estimate, they were asked whether they usually lost or won, and the dollar amount they usually lost or won. Respondents were also asked whether they set themselves a limit and, if so, how often they kept to that limit.

This chapter examines the prevalence survey data to estimate the perceived expenditure as reported by these respondents. The chapter first looks at the difficulties usually encountered when estimating gambling expenditure from the viewpoint of the clientele (i.e. responses on a survey). Attention is drawn to the considerable discrepancies between self-reported expenditure and actual expenditure, the former usually being substantially smaller. It then presents the self-reported or perceived expenditure by gamblers for each gambling activity. Comparison with data available from other relevant research is made throughout the chapter.

4.2 Difficulties with Estimating Gambling Expenditure

Social science research in general, and gambling research in particular, has highlighted the problems encountered in telephone survey research where respondents are asked to indicate their income or expenditure levels on any activity (Babbie 2004, pp.270, 417; Productivity Commission 1999). Possible inaccuracies in self-reported expenditure by respondents may be classified in two categories: non-sample error and non-response bias.

4.2.1 Non-sample error

Non-sample error refers to error within a survey which does not result from the sampling procedure (this type of error can be adjusted by weighting procedures) but originates from factors such as the questionnaire design, survey procedures, and interviewer effects. A number of factors related to non-sample error operate against accurate estimates of individual gambling expenditure. Respondents to the prevalence survey were asked to complete a series of complex cognitive tasks (i.e. recalling visits to a particular venue over twelve months as well as the amount of money taken with them on each occasion) and calculations (i.e. providing an average or 'usual' amount) to produce their answer. When asked to provide a 'usual' amount, respondents often focus on an exceptional amount which is more easily recalled. This can lead to an overestimate of the average. On the other hand, social desirability factors may have mediated the responses. Some respondents may be reticent to provide full details of

expenditure they perceive to be excessive, resting in an underestimate of expenditure. In all likelihood, respondents may simply not have been able to remember the exact amount nor have any type of records or receipts which they could refer to in order to provide an accurate response.

4.2.2 Non-response bias

Non-response bias occurs when groups of respondents sharing particular characteristics refuse, either passively or outright, to participate in a survey or to provide an answer to a question. As income and expenditure questions have been demonstrated to be sensitive issues for many surveys, such as the ABS Monthly Population Survey and Household Expenditure Survey, these questions often produce a non-response bias with respondents unwilling to provide an accurate response.

Considering the survey topic, individuals who could be considered problem gamblers or those who were unwilling to admit the amount they spent on gambling may not have been willing to participate in the survey, thus reducing the numbers of certain sorts of respondents in the survey sample. The Productivity Commission outlined several issues with using population surveys to estimate gambling prevalence and expenditure which would tend to miss out the most severe cases of gamblers (Productivity Commission 1999, 6.34–35). For example, the Commission's survey of problem gambler clients of counselling agencies found that around one quarter said they would not have participated in a telephone prevalence survey (Productivity Commission 1999, 6.35). Further, it can be assumed that gamblers in general and problem gamblers in particular find it easier to recall winnings rather than losses (Productivity Commission 1999, 23.19); hence, the reliability of any expenditure estimates is contentious. Nonetheless, the Productivity Commission noted that 'problem gamblers may be a small minority of the gambling population, but their high levels of expenditure mean that they account for a substantial share of overall expenditure – a result which is not affected by the methods used to calculate the shares' (Productivity Commission 1999, 7.45).

4.3 'Perceived' Self-reported Expenditure by Gambling Activity

Due to the problems inherent in asking gamblers to provide accurate amounts, or even estimates, of their gambling expenditure, the expenditure results of the survey are presented as *perceived* amounts. However, the comparison of percentages is important in that it does provide an indication of the *relative* expenditure across different gambling activities. Importantly, it also provides a proportionate breakdown of expenditure by NT residents, information that is not available in aggregate expenditure statistics that include expenditure by tourists, other visitors, and interstate and overseas remote gamblers.

Table 4.1 and Figures 4.1 to 4.3 summarise the total annual perceived self-reported expenditures on all types of gambling activities by regular and non-regular gamblers and all NT adult gamblers. All are estimated using the relevant population weights from the self-reported results on the prevalence survey.

Table 4.1: Total annual perceived self-reported expenditure on gambling activities

Gambling activity	Regular gamblers (N=10,359)		Non-regular gamblers (N=90,583)		All gamblers (N=100,942)	
	Amount ($)	%	Amount ($)	%	Amount ($)	%
Played poker or gaming machines	42,414,216	35.6	12,121,028	32.5	54,535,243	34.8
Bet on horse or greyhound races	29,506,571	24.7	5,891,521	15.8	35,398,092	22.6
Bought instant scratch tickets	821,664	0.7	2,251,982	6.0	3,073,646	2.0
Played lotto or other lottery game	1,113,668	0.9	6,342,879	17.0	7,456,548	4.8
Played keno at club/hotel/casino	7,612,451	6.4	1,964,969	5.3	9,577,420	6.1
Played table games at a casino	10,428,870	8.7	5,360,859	14.4	15,789,729	10.1
Played bingo at a club or hall	1,946,245	1.6	103,319	0.3	2,049,564	1.3
Played an internet casino game	1,557,643	1.3	5,051	0.0	1,562,694	1.0
Bet on a sporting event	16,335,012	13.7	2,285,091	6.1	18,620,103	11.9
Played games privately for money	7,513,741	6.3	835,989	2.2	8,349,729	5.3
Played any other gambling activity	8,528	0.0	87,506	0.2	96,035	0.1
Total	**119,258,610**	**100[a]**	**37,250,194**	**100[a]**	**156,508,804**	**100[a]**

Note: [a] The totals are more than 100% due to rounding up.
Source: NT Gambling Prevalence Survey 2005

Figure 4.1: Total annual self-reported expenditure on gambling activities by all gamblers in the NT
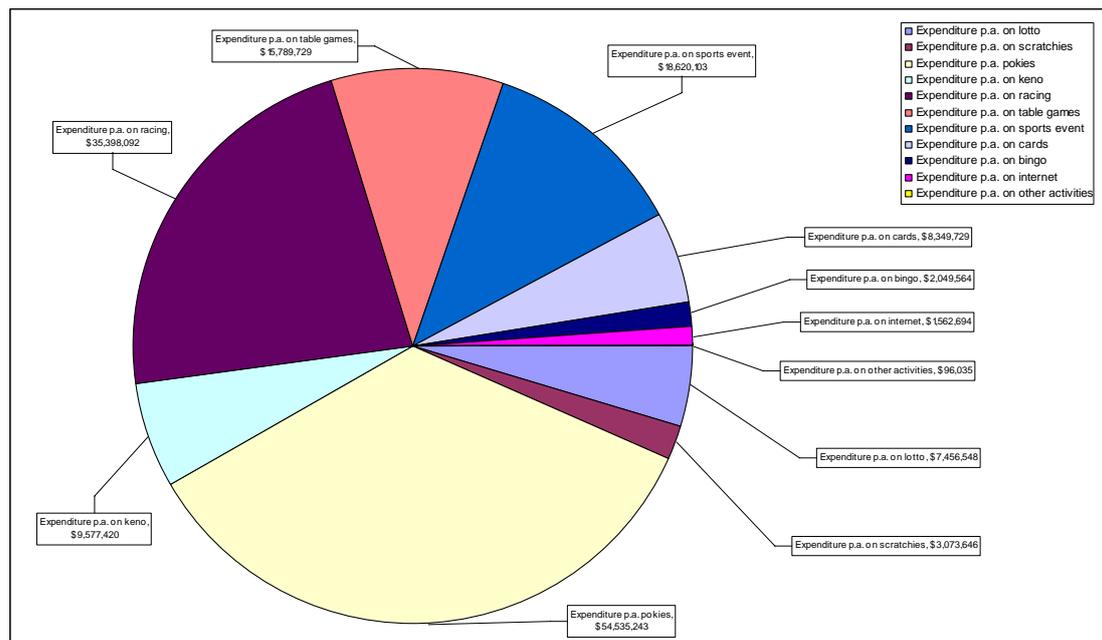
Overall, the perceived total annual expenditure as estimated for the total population indicates that NT residents spend a greater proportion of their gambling dollars (34.8%) on playing poker or gaming machines than on any other gambling activity (Table 4.1 and Figure 4.1). Betting on horse or greyhound racing accounts for almost one-quarter (22.6%) of gambling expenditure. Playing table games at a casino and betting on a sporting event account for 10.1% and 11.9% of perceived expenditure respectively with the remaining gambling activities accounting for over one-fifth (20.6%) of total community expenditure.

Figure 4.2: Total annual self-reported expenditure on gambling activities by regular gamblers

Expenditure p.a. on table games, $10,428,870

Expenditure p.a. on sports event, $16,335,012

Expenditure p.a. on racing, $29,506,571

Legend:
- Expenditure p.a. on lotto
- Expenditure p.a. on scratchies
- Expenditure p.a. pokies
- Expenditure p.a. on keno
- Expenditure p.a. on racing
- Expenditure p.a. on table games
- Expenditure p.a. on sports event
- Expenditure p.a. on cards
- Expenditure p.a. on bingo
- Expenditure p.a. on internet
- Expenditure p.a. on other activities

Expenditure p.a. on cards, $7,513,741

Expenditure p.a. on bingo, $1,946,245

Expenditure p.a. on internet, $1,557,643

Expenditure p.a. on other activities, $8,528

Expenditure p.a. on lotto, $1,113,668

Expenditure p.a. on scratchies, $821,664

Expenditure p.a. on keno, $7,612,451

Expenditure p.a. pokies, $42,414,216

Figure 4.3: Total annual self-reported expenditure on gambling activities by non-regular gamblers

Expenditure p.a. on racing, $5,891,521

Expenditure p.a. on keno, $1,964,969

Expenditure p.a. on table games, $5,360,859

Legend:
- Expenditure p.a. on lotto
- Expenditure p.a. on scratchies
- Expenditure p.a. pokies
- Expenditure p.a. on keno
- Expenditure p.a. on racing
- Expenditure p.a. on table games
- Expenditure p.a. on sports event
- Expenditure p.a. on cards
- Expenditure p.a. on bingo
- Expenditure p.a. on internet
- Expenditure p.a. on other activities

Expenditure p.a. on sports event, $2,285,091

Expenditure p.a. on cards, $835,989

Expenditure p.a. on bingo, $103,319

Expenditure p.a. on other activities, $87,506

Expenditure p.a. on internet, $5,051

Expenditure p.a. on lotto, $6,342,879

Expenditure p.a. pokies, $12,121,028

Expenditure p.a. on scratchies, $2,251,982

The proportional perceived expenditure by regular gamblers closely matches that of all gamblers in the NT for the top three major gambling activities (Figure 4.2). Regular gamblers contribute $119,258, 610 (76%) of the total estimated self-reported annual expenditure on gambling. Almost 74% of this is accrued from the three top gambling activities of playing poker or gaming machines, betting on horse or greyhound races, and table games.

In comparison, for non-regular gamblers, playing poker or gaming machines and betting on horse or greyhound races account for less expenditure proportionately (almost one half – 48.3%). Almost one-third (31.4%) of the expenditure by non-regular gamblers is accounted for by playing lotto or other lottery games (17%) and playing table games at a casino (14.4%). These proportions are considerably higher than that for all gamblers where 4.8% of gambling expenditure is spent on playing lotto or other lottery games and 10.1% is directed to playing table games at a casino (Figure 4.3).

Table 4.2 presents the annual perceived per capita expenditure by regular and non-regular gamblers. Note that regular gamblers in the table include problem gamblers. The differences between these amounts are significantly different for all modes of gambling, except for total expenditure on 'other types of gambling'. In other words, as expected, regular gamblers spend significantly more than non-regular gamblers on all modes of gambling activities. On average, the self-reported expenditure by regular gamblers is $4,094 per year playing poker machines, $2,848 betting on horse or greyhound races, and $1,007 playing table games at a casino, as shown in Table 4.2. The only category in which the expenditure of non-regular gamblers approached the average spending of regular gamblers was lotteries (about 66% of gambler expenditure) and to a lesser extent instant scratch tickets (about 33% of gambler expenditure).

Table 4.2: Average annual perceived per capita expenditure on gambling activities by regular and non-regular gamblers

Gambling activity	Regular gamblers (N=10,359)		Non-regular gamblers (N=90,583)		All gamblers (N=100,942)	
	Amount ($)	%	Amount ($)	%	Amount ($)	%
Played poker or gaming machines	4,094	35.6	134	32.5	540	34.8
Bet on horse or greyhound races	2,848	24.7	65	15.8	351	22.6
Bought instant scratch tickets	79	0.7	25	6.0	30	2.0
Played lotto or other lottery game	108	0.9	70	17.0	74	4.8
Played keno at club/hotel/casino/other	735	6.4	22	5.3	95	6.1
Played table games at a casino	1,007	8.7	59	14.4	156	10.1
Played bingo at a club or hall	188	1.6	1	0.3	20	1.3
Played an internet casino game	150	1.3	0	0.0	15	1.0
Bet on a sporting event	1,577	13.7	25	6.1	184	11.9
Played games privately for money	725	6.3	9	2.2	83	5.3
Played any other gambling activity	1	0.0	1	0.2	1	0.1
Total per capital expenditure	**11,512**	**100**	**411**	**100**	**1,550**	**100**

Note: [a] Regular gamblers include problem gamblers in this table.
Source: NT Gambling Prevalence Survey 2005.

4.4 Expenditure by Problem Gamblers

The Productivity Commission (1999) has shown that, although problem gamblers may form only a small proportion of those who gamble, they contributed approximately one-third of the total gambling revenue, thus bearing an inordinate burden of the cost of gambling. The Productivity Commission also found that the estimated expenditure for individual problem gamblers averaged $12,200 which is 19 times as much as the average $645 loss by other gamblers (Productivity Commission 1999, 7.40). The Commission concluded that problem gamblers, while small in number, have a cumulatively large impact, and the 'implication is that of the $10.7 billion of gambling expenditure by Australians 1997–98, around $3.6 billion comes from problem gamblers' (Productivity Commission 1999, 7.42). The Commission's survey further suggested that '60 per cent of gamblers outlaying more than $4,500 a year are not problem gamblers. Even so, the data suggests strongly that problem gamblers are much more prevalent amongst big spenders than among light spenders. The average expenditure per gambler tends to climb with higher SOGS scores' (Productivity Commission 1999, 7.42).

Figure 4.4 presents the absolute amount of the self-reported total annual expenditure for problem gamblers, non-problem regular and non-regular gamblers in the NT for each gambling activity. Figure 4.5 shows the same information but represented as a proportion of the total gambling expenditure. Overall, problem gamblers (1.1% of the population) accounted for 29% of all gambling expenditure in the NT(Figure 4.5).

Figure 4.4: Total NT annual self-reported expenditure for problem gamblers, non-problem regular gamblers and non-regular gamblers
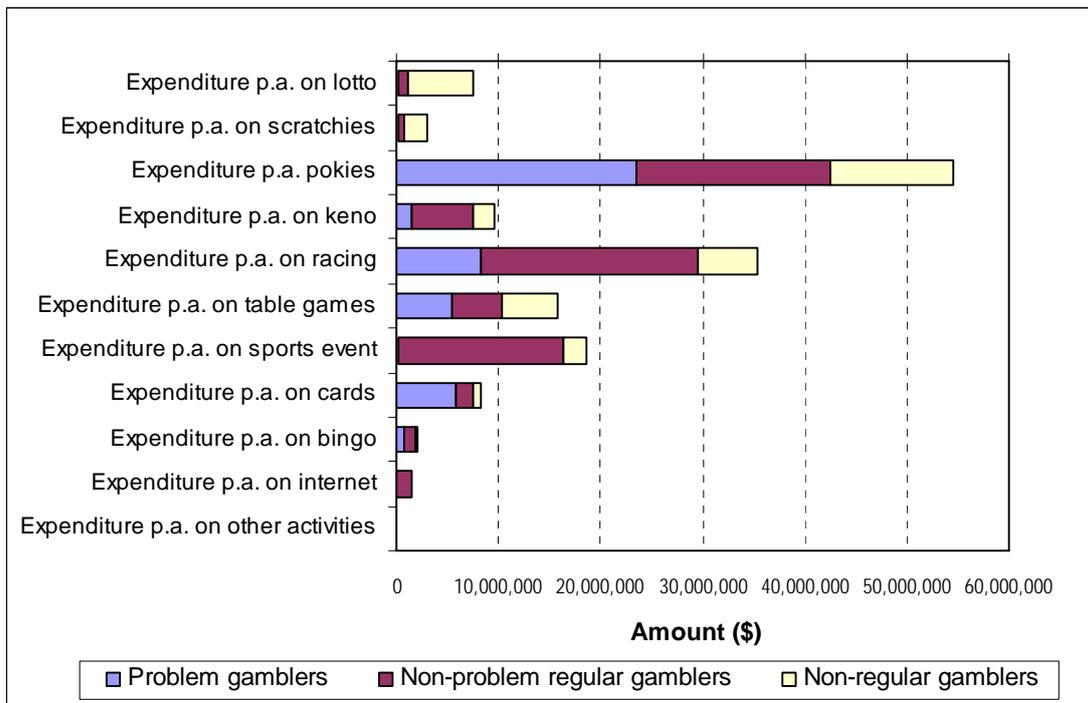
It is clear from Figure 4.4 that the gambling activities of playing poker machines, betting on the races and playing cards for private money absorb the bulk of all gambling expenditure in the NT. Also of significance is that problem gamblers make

up a large proportion of the money spent on playing: cards (69%), poker and gaming machines (43%), casino table games (34%), and bingo (33%). These findings should be taken in the context of the total population of problem gamblers in the NT (see Chapter 3), some 1,478 people representing just 1.5% of the total NT adult gambling population (N=100,942) identified in this survey.

These results broadly correspond with those of the Productivity Commission, which re-emphasised that problem gamblers account for a particularly high share of total spending on gaming machines and racing, and account for a negligible share of spending on lotteries (Productivity Commission 1999, 7.45).

Figure 4.5: Percentage of annual self-reported expenditure spent by problem gamblers, non-problem regular gamblers and non-regular gamblers
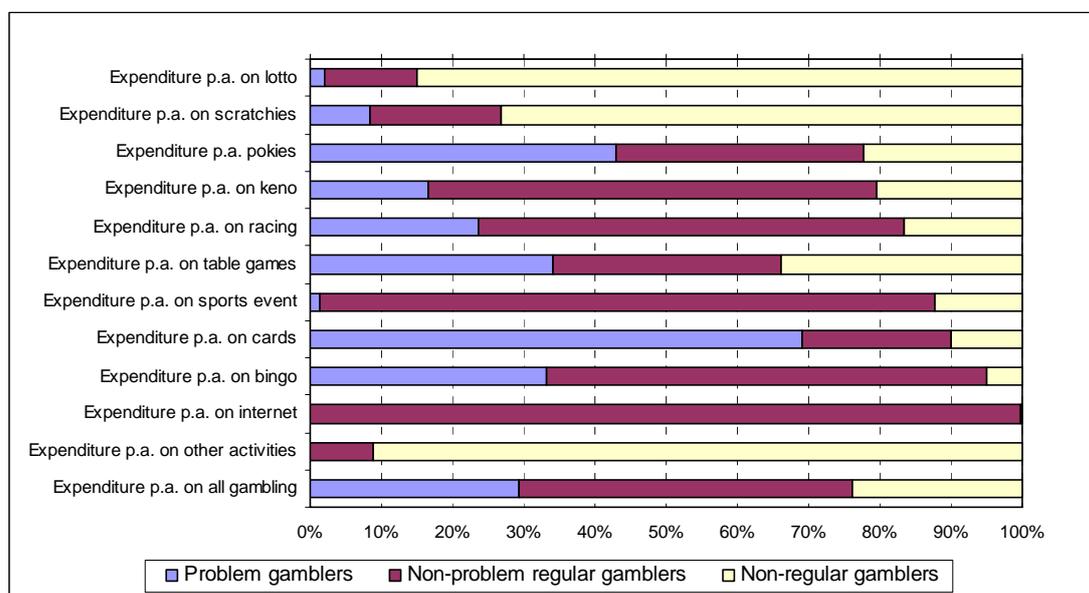
Notes: 1) No information was provided by problem gamblers about their expenditure on Internet casino games. 2) Problem gamblers contributed 0.1% of expenditure on any other gambling activity.

Table 4.3 presents the average annual self-reported per capita expenditure on gambling activities by problem gamblers in comparison with regular gamblers and all gamblers. Clearly evident is the large variation in spending between problem gamblers and all other gamblers. For example, from this self-reported data problem gamblers are estimated to spend on average $15,674 per year playing poker or gaming machines, regular gamblers spend $2,184 whereas non-regular gamblers spend just $136 per capita (see Tables 4.2 and 4.3).

Problem gamblers also spend more per capita in all activities, except on one activity – betting on a sporting event. In this case, regular non-problem gamblers reported spending as much as $1,810 in comparison with $179 spent by problem gamblers. The per capita spending by problem gamblers betting on races ($5,646) is significantly larger than the reported $2,383 by regular non-problem gamblers. It is also significantly larger for problem gamblers playing table games at a casino ($3,640) compared to non-problem regular gamblers ($568), and for playing cards privately ($3,905) compared to ($196).

Table 4.3: Average annual self-reported per capita expenditure on gambling activities by problem gamblers in comparison with all regular gamblers

Gambling activity	Problem gamblers (N=1,478)		Non-problem regular gamblers (N=8,881)		Non-regular gamblers (N=90,583)	
	Amount ($)	%	Amount ($)	%	Amount ($)	%
Played poker or gaming machines	15,862	51.1	2,135	25.8	134	32.5
Bet on horse or greyhound races	5,646	18.2	2,383	28.8	65	15.8
Bought instant scratch tickets	174	0.6	63	0.8	25	6.0
Played lotto or other lottery game	98	0.3	109	1.3	70	17.0
Played keno at club/hotel/casino/other	1,074	3.5	678	8.2	22	5.3
Played table games at a casino	3,640	11.7	568	6.9	59	14.4
Played bingo at a club or hall	460	1.5	143	1.7	1	0.3
Played an internet casino game	0	0.0	175	2.1	0	0.0
Bet on a sporting event	179	0.6	1,810	21.9	25	6.1
Played games privately for money	3,905	12.6	196	2.4	9	2.2
Played any other gambling activity	0	0.0	1	0.0	1	0.2
Total per capita expenditure	**31,038**	**100**	**8,261**	**100**	**411**	**100**

Figure 4.4: Total annual self-reported expenditure by gambling activity for problem gamblers
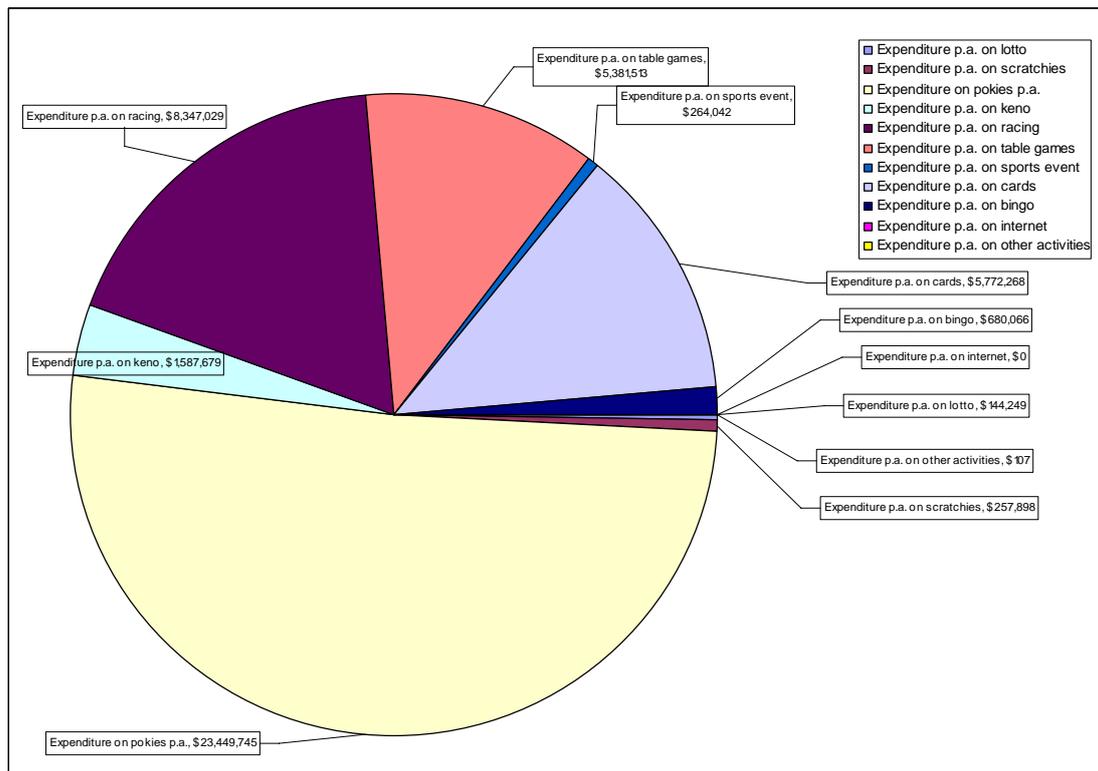
4.5 Comparison with other Studies

Self-reported gambling expenditure is clearly in the category of sensitive survey data that might not be provided accurately. In addition, there are almost certain but unknown biases introduced as a consequence of incomplete survey responses (only 37% response rate) and expenditure estimates are approximations derived from responses to questions about gambling frequency and amount data. There is clearly scope for the self-reported expenditure data to be grossly biased and, most importantly, severely underestimated.

However, even if biases are present, the above analyses are nonetheless useful as a means of comparing the relative importance of different types of gambling activity and perhaps providing a minimum estimate of actual expenditure and player loss. Some insight to possible biases is available through comparisons of the self-reported expenditure data from the survey with other available data. Such comparisons are undertaken in this section.

The most direct and obvious data to compare with the self-reported expenditure data is the official (and accurate) government data on player losses. Table 4.4 presents statistics for 2004/05 for the NT on player loss and self-reported expenditure for different categories of gambling activities. Some of the classes of self-reported expenditure presented in Table 4.4 are aggregates of the gambling activities recorded in the telephone survey. This was done to reduce the possibility of drawing misleading comparisons between the different categories of player loss.

Table 4.4: Northern Territory Treasury gambling player loss statistics 2004/05 and annual self-reported expenditure from the 2005 NT Survey

Gambling activities/venues	Total player loss recorded by activity ($m)	Total self-reported expenditure ($m)	Total self-reported expenditure as % of player loss
Pokies – Total	114.0	54.5	47.8
Casinos – other	23.0	19.7	70.4
Internet Gambling	14.1	1.6	11.3
Lotteries [a]	13.7	23.0	167.9
Betting [b]	107.6	54.0	50.1
Total[c]	**272.4**	**152.8**	**56.0**

Notes: [a] A more appropriate comparison for lotteries self-reported expenditure may be turnover takings ($34.1m), rather than player losses.
[b] Includes all race betting (TAB and bookmakers) as well as sports betting.
[c] Does not include untaxed or unregulated gambling

On average, the self-reported gambling expenditure on all regulated activities by survey respondents was slightly over half the total NT Treasury recorded player loss on all regulated gambling in NT during 2004/05. When interpreting these comparisons it is important to recognise that the telephone survey respondent are largely NT residents, or at least people who were present in the NT at the time of the survey, whereas the NT Treasury player loss records are derived from all NT regulated gambling activities which may or may not be undertaken by NT residents.

Therefore, data from these two sources will not be completely congruent. Indeed, they are known to be different in some instances – most obviously in the case of internet gambling which is not legal for NT based players. The large difference between the

player loss and self-reported expenditure for internet gambling is not surprising since most expenditure will flow from interstate and overseas residents. Self-reported expenditure on lotteries is the one activity category which shows quite an unexpected and unexplainable difference with player loss records, the former being 68% larger than the latter. Other than internet gambling and lottery expenditure all other categories in Table 4.4 show fairly consistent differences between recorded player loss and self-reported expenditure – differences which indicate recorded player losses amount to be about twice the self-reported expenditure. Some of the difference may be due to non-Territory resident player but much of the difference is probably associated with under reporting of expenditure.

If most player losses recorded by NT-based gambling activities are largely made by NT residents (or at least if the losses by non-NT residents are approximately equal to the interstate and overseas losses by NT residents) then this result suggests that self-reported expenditure may underestimate gambling losses by a factor of approximately two. Factoring in an approximate underestimation of about one-half in reported expenditure suggests the 1,500 or so problem gamblers in the NT may be losing up to the order of $60,000 each per year.

A second comparison was made with the total expenditure on various gambling activities as reported by the Queensland Government Office of Economic and Statistical Research (OESR) (2005). Table 4.5 compares the total perceived self-reported expenditures from the prevalence survey with those reported by the OESR. Note that the OESR data reports on poker machines in community venues only (i.e. pubs and clubs) and does not include the machines in the casinos, which was $59 million in 2003–04. The survey data, on the other hand, does include spending on poker machines in casinos. In practice, therefore, poker machine self-reported expenditure is underreported by a factor of two. There are also clear differences in expenditures between the survey's results and the OESR data for each activity, the largest being for expenditure on betting on table games , which is five times larger in the OESR figures than those estimated from the survey. This is followed by expenditures on sporting events (three times higher than the survey estimate). This shows that the self-reported data is very much an underestimation, even when the expenditure by non-residents is taken into account, and that the degree of underestimation varies significantly between gambling activities.

Table 4.5: Comparison of survey's perceived annual expenditure and that reported by the OESR

Gambling activity	Expenditure (2003–04) as reported by the OESR Amount ($) in millions	NT Prevalence Survey Amount ($) in millions
Played poker or gaming machines	45.000[1]	54.535
Bet on horse or greyhound races	50.832	35.376
Bought instant scratch tickets	1.468	3.065
Played lotto or other lottery game	11.737[2]	7.393
Played keno at club/hotel/casino/other	n.a[5]	9.400
Played table games at a casino	80.894	15.778
Played bingo at a club or hall	n.a[5]	2.049
Played an Internet casino game	14.688[3]	1.562
Bet on a sporting event	62.720[4]	18.620
Played games privately for money	n.a[5]	8.347
Played any other gambling activity	n.a[5]	.096
Total	**267.339**	**156.509**

Notes: [1] This figure does not include poker machines in casinos which in 2003/04 was $59 million.
[2] OESR's figure includes expenditure on Lotteries, Lotto and Pool; [3] OESR's figure includes expenditure on interactive gaming; [4] OESR's figure includes expenditure on sports betting;
[5] n.a. means not available in the OESR's figures.
Source: NT Gambling Prevalence Survey 2005 and OESR (2005)

A third comparison attempts to tease out the proportion of expenditure originating from visitors to the NT. Previous research provided evidence to show that a 'significantly greater proportion of the Territory's gambling business comes from overseas and interstate compared with other jurisdictions' (OESR 2005, p.27). This is because the NT has the only on-line gaming facility in Australia. The NT receives considerable gambling revenues from licensed telephone and online bookmakers. Over 60% of sports betting and more than 7% of racing expenditure were sourced from overseas sources in 2003/04 (OESR 2005, p.27).

Table 4.5: Annual self-reported per capita expenditure on gambling activities by residents and non-residents of the NT

Gambling activity	Annual Per Capita Expenditure	
	NT resident (N=98,982) Amount ($)	Non-NT resident (N=883) Amount ($)
Played poker or gaming machines	504	5,251
Bet on horse or greyhound races	339	2,064
Bought instant scratch tickets	30	83
Played lotto or other lottery game	74	86
Played keno at club/hotel/casino/other	87	1,010
Played table games at a casino	148	1,258
Played bingo at a club or hall	21	0
Played an Internet casino game	1	1,631
Bet on a sporting event	187	47
Played games privately for money	82	233
Played any other gambling activity	1	86
Total per capita expenditure	**1,474**	**11,749**

Table 4.6 represents the perceived self-reported expenditure by residents and non-residents of the NT derived from the NT telephone survey. Clearly, any non-NT residents responding to this survey had to be currently visiting or temporarily staying

in NT and, as such, may not accurately reflect the gambling behaviour of interstate or overseas residents who gamble through NT based venues. Nevertheless, the small number of non-NT resident gamblers in the survey provides for some interesting comparisons with NT resident gamblers.

The groups were identified from the question: 'Do you consider your current principal place of residence to be the Northern Territory'. Those that answered in the negative considered there primary place of residence 'out of state' even though they were temporarily residing in the NT at the time of the survey. These respondents could, for example, be on temporary working contract or visitors for a short period of time. The analysis of the of the relative self-reported expenditures in Table 4.6 show that the self-reported expenditures on all gambling activities, except for betting on sports activities, are significantly higher for non-NT residents than for NT residents. For example, self-reported expenditures on playing poker machines per year at $5,251 and on racing per year at $2,064 by non-residents are higher than those reported by NT residents at $504 and $339 respectively. This observation extended for all other gambling types, that is temporary residents were more likely to report higher expenditure on gambling than permanent NT residents. To explore this finding further, more analysis on the characteristic of temporary residents is warranted, as the results here clearly suggest they may display quite different gambling patterns.

5. 'Pokies', Venues and Regions

At the end of the 2004/05 financial year, there were 1,802 poker machines in the NT, inclusive of machines located in hotels, clubs and the two casinos (Table 5.1). This equated to one machine for every 76.7 adults of the adult resident population of 138,225 or, put another way, 13 machines per 1,000 adult residents. The growth of the number of poker machines and the related amount of player loss[1] over the past decade is presented in Table 5.1. The amount of player loss in the 2004/05 financial year was 114 million dollars (Table 5.1). This equates to $825.05 for each adult resident of the NT.[2] When the per capita rate is calculated for all persons in the estimated resident population (202,800 persons at the end of June 2005) the player loss is $562.35, slightly below the Australian average in 2004 of $606 (South Australian Centre for Economic Studies 2005b, p.2). Of this amount, $64.2 million was spent in the two casinos (Table 5.2) a figure that represented a touch less than three quarters of the total casino gaming profit of $87.1 million. The remaining $49.8 million was spent on machines in what are referred to as 'community venues' (i.e. hotels and clubs) (Table 5.3). The venue locations for those outside Darwin and surrounds are illustrated in Figure 5.1.

Table 5.1: Number of poker machines and aggregate player loss by financial year

Financial Year	No. machines in casinos	No. machines in pubs/clubs	Total machines	Total player loss ($)
1996/97	575	499	1,074	44,822,307
1997/98	580	548	1,128	54,732,491
1998/99	607	593	1,200	63,865,352
1999/00	646	648	1,294	69,787,949
2000/01	619	700	1,319	77,862,865
2001/02	611	833	1,444	88,786,923
2002/03	690	921	1,611	96,715,052
2003/04	720	957	1,677	104,052,133
2004/05	817	985	1,802	114,042,345

Source: Data for this table were supplied by Racing, Gaming & Licensing, NT Treasury and are based on Gaming Machine Performance tables and Casino Monthly Financial Reports.

---

[1] The terms 'player loss', 'profit' and 'gross revenue' are used interchangeably. They refer simply to the amount actually lost playing poker machines.

[2] This figure may be inflated by tourist and visitor participation. The actual resident per capita figure is not known; however, the inflated figure is reported as it is conventionally included as a basis for trend analysis and for inter-jurisdictional comparison.

Figure 5.1: Community venue locations

NORTHERN TERRITORY GAMBLING VENUES
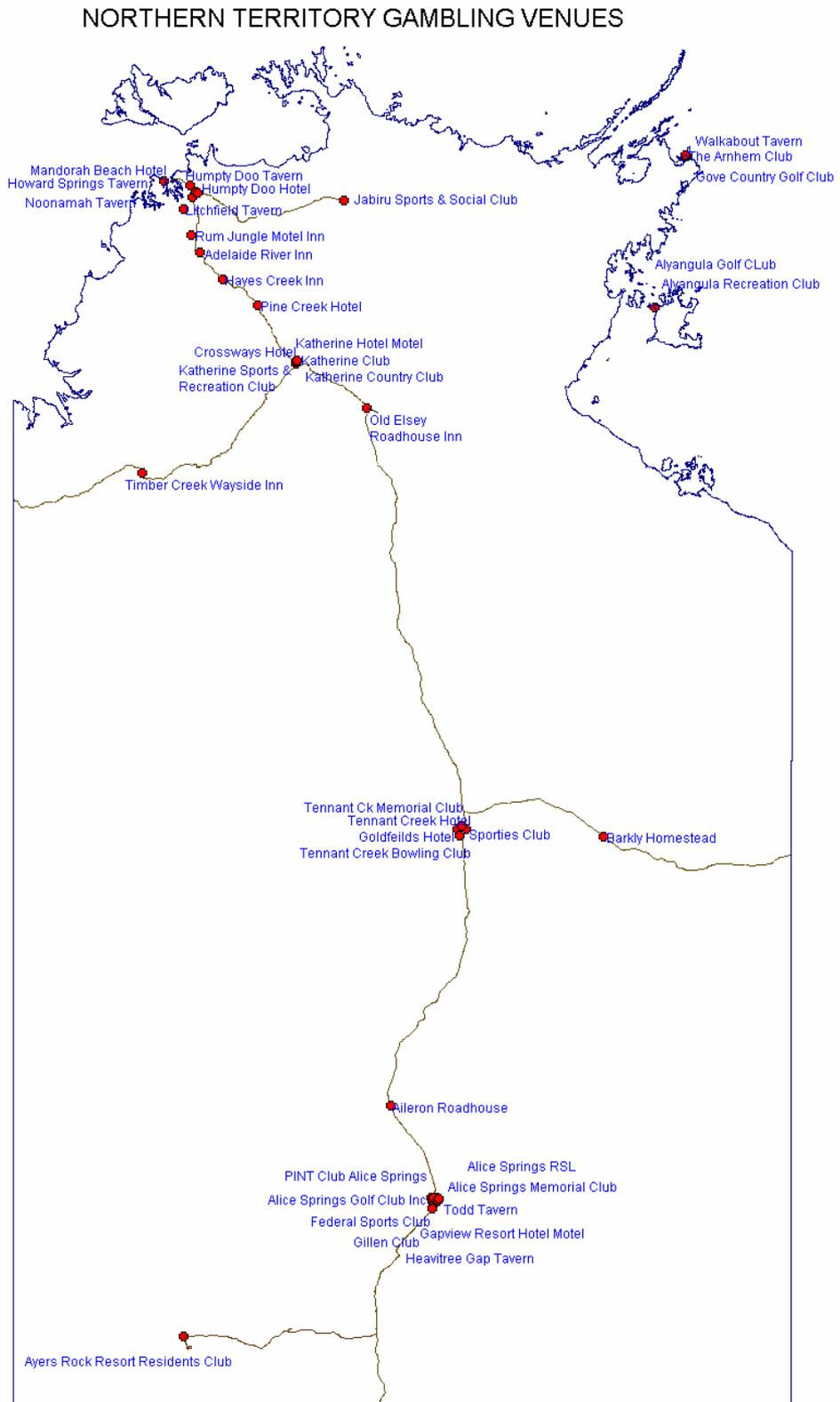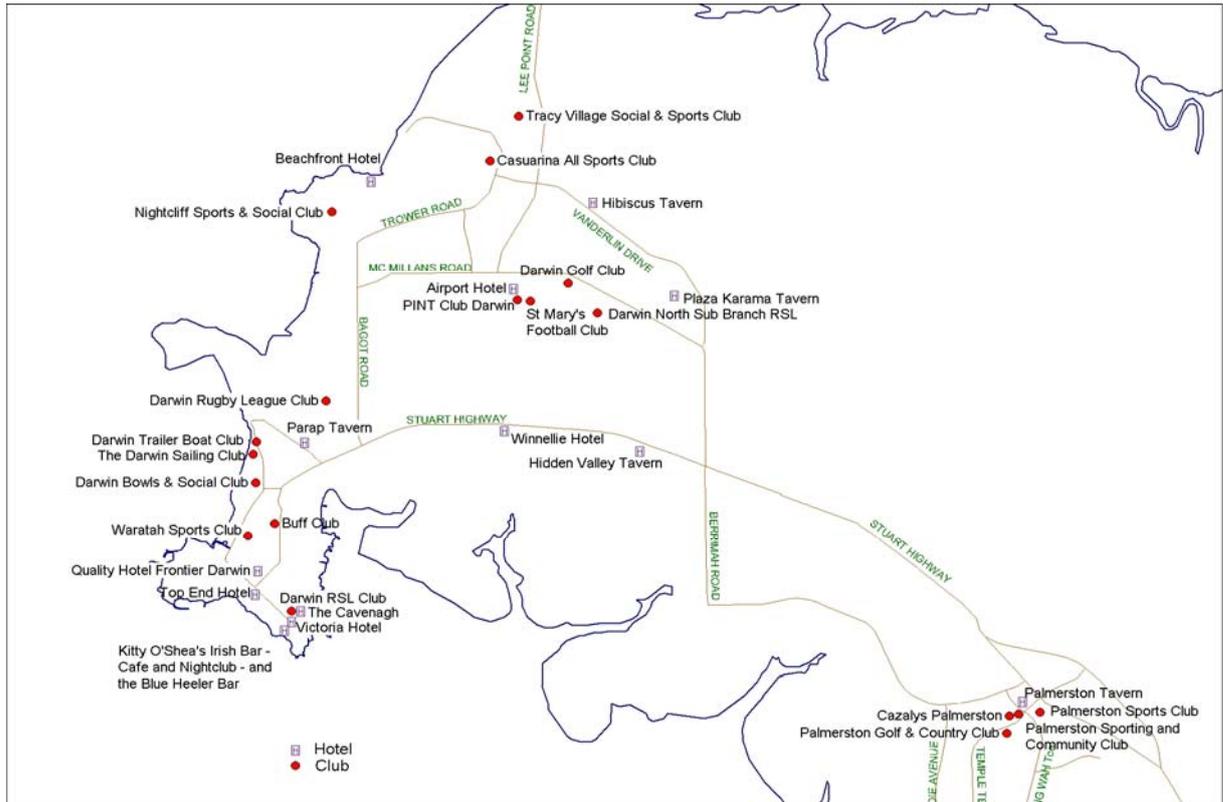
Source: Maps constructed by the Australian Bureau of Statistics, Darwin.

5.1 Poker Machines and Casinos

Electronic gaming machines (EGMs) or 'pokies' were exclusively available in the two casinos (i.e. Skycity in Darwin and Lasseters in Alice Springs) until 1996. The total number of machines in the casinos increased by 242 during the past decade to a total of 817 at the end of the 2004/05 financial year, with the majority of this increase occurring in Darwin's Skycity casino (Table 5.2). Total player loss increased proportionately over that period from $28.5 to $64.2 million. In addition, the average player loss per machine increased significantly from 1996/97 until 2000/01, and has remained steady since that time despite the substantial increase in the number of machines in Skycity casino.

Table 5.2: Poker machine numbers and player loss in casinos
1996/97 to 2004/05

Financial Year	No. machines Lasseters	No. machines Skycity	Total machines (combined casinos)	Player loss ($) (combined casinos)	Ave. player loss per machine ($)
1996/97	200	375	575	28,513,207	49,588
1997/98	211	369	580	33,238,972	57,309
1998/99	240	367	607	39,782,930	65,540
1999/00	257	389	646	43,550,827	67,416
2000/01	248	371	619	50,083,417	80,910
2001/02	240	371	611	52,248,722	85,513
2002/03	251	439	690	54,999,487	79,709
2003/04	251	469	720	59,086,690	82,065
2004/05	251	566	817	64,215,615	78,599

Source: Data for this table were supplied by Racing, Gaming & Licensing, NT Treasury and are based on Gaming Machine Performance tables and Casino Monthly Financial Reports.

5.2 Poker Machines in Community Venues

The gambling landscape of the NT changed dramatically when poker machines were introduced into community venues on 1 January 1996 (for a review of this process see Alder 1998; McMillen and Togni 2000). In the past decade, the number of poker machines in community venues doubled from 495 to 985 (Table 5.3). Player loss increased more than threefold from over 15 million dollars in 1996/97 to just under 50 million in 2004/05. Individual machines are also becoming more profitable which is reflected by the steady rise in average player loss per machine from $32,684 in 1996/97 to $50,586 in 2004/05.

Table 5.3: Poker machine numbers and player loss in community venues 1996/97 to 2004/05

Financial Year	No. Venues [a]	No. machines	Total player loss	Ave. player loss per machine
1996/97	46	499	16,309,100	32,684
1997/98	55	548	21,493,519	39,222
1998/99	59	593	24,082,422	40,611
1999/00	61	648	26,237,122	40,489
2000/01	61	700	27,779,448	39,685
2001/02	64	833	36,538,201	43,863
2002/03	69	921	41,715,565	45,294
2003/04	69	957	44,965,443	46,986
2004/05	68	985	49,826,730	50,586

Notes: [a] Number of venues that had reported poker machine earnings in each financial year.
Source: Data for this table were supplied by Racing, Gaming & Licensing, NT Treasury and are based on Gaming Machine Performance tables.

5.3 Comparison of Casinos with Community Venues

This section explores the effect of the introduction of gaming machines into community venues on the share of gaming machine revenue of the two NT casinos. For this analysis, it was not possible to explore the player loss on an individual casino basis since the data made available from the NT Treasury were not disaggregated for reasons of confidentiality, although the annual number of machines at each of the two venues was available. However, gross player loss data were provided in terms of monthly rates for each year from 1996–97 through 2004–05. Average rates were calculated for months and years for casinos. The averaged comparisons are shown in Table 5.4.

Table 5.4: Comparison of casino and community venue statistics, 1996–2005

Yearly Averages 1996–2005	Casinos	Community Venues
Total player loss	$47.302 (mil.)	$32.105 (mil.)
Number of machines [a]	651.67	742.67
Average loss per machine	$71,850	$42,158
Seasonal variability [b] (2004–05)	0.12	0.26

Notes: [a] Average annual number at Lasseters Casino (Alice Springs) = 238.7; Diamond Beach/Skycity (Darwin) = 412.9 (revenues not disaggregated for reason of confidentiality)
[b] Seasonal variability is measured by a coefficient of variation, derived by dividing the standard deviation of monthly player loss by its annual mean value. A higher coefficient reflects greater monthly fluctuation in player loss. It represents an attempt to capture seasonal effects caused by tourist influx and other environmental variations.

It is clear from the averaged comparisons of key outcomes in Table 5.4 that the casino-based machines earned more than those in community venues by a significant margin over the past 10 years. Not only did the casinos generate a greater total income ($15.2 million over 10 years), but they achieved this with fewer machines. In fact, the average player loss per machine located in a casino was almost twice as much as for one based in a club or hotel. Casino machine revenues also appeared more stable in earnings from month to month in that they were only about half as susceptible to monthly variability (as indicated by their coefficients of monthly variation for 2004–05 explained in Appendix D).

Also of interest are the comparative trends in patterns of machine gaming since the introduction of community gaming machines. From Figure 5.2, it appears that the trends for total annual machine gaming revenues are roughly parallel, showing substantial rates of annual growth (10.6% for casinos, 14.9% for community venues in unadjusted dollars), with casinos earning greater revenues.

Figure 5.2: Comparison of gaming machine revenue between casinos and community venues (annual totals 1996–2005)
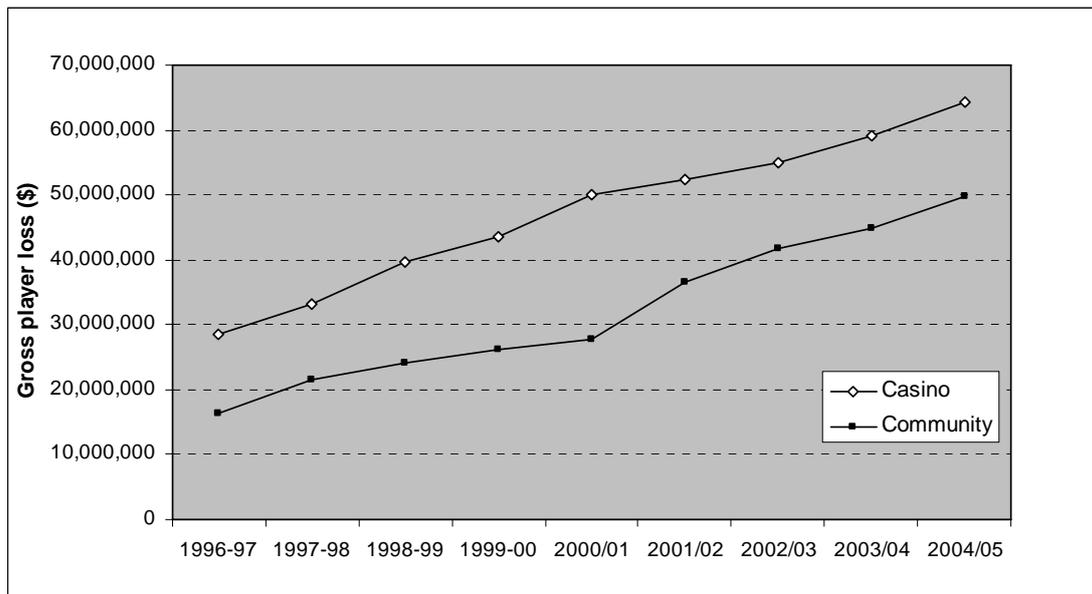
The only deviation from a gradual and steady increase in the trend of total player loss in Figure 5.2 was a slight drop in the rate of increase in the community venue totals around the year 2000–01. This drop corresponded with an increase in casino total player loss for 2001. However, growth was soon recovered in the following years and any connection between these two trends would appear unlikely.

Figure 5.3: Trends in machine numbers: casinos and community venues, 1996–2005
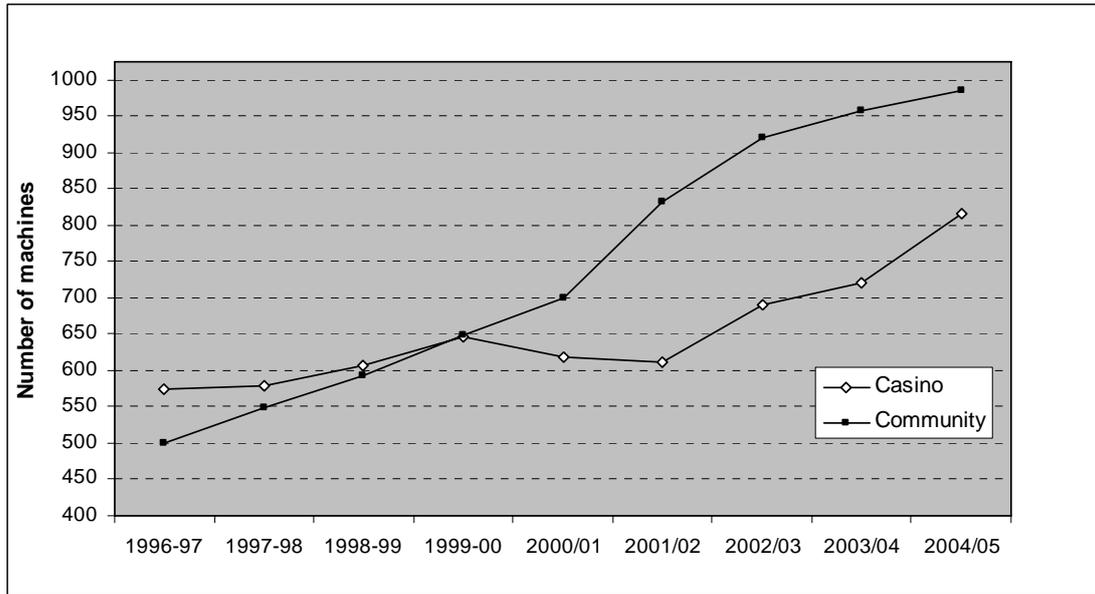
Figure 5.4: Comparative trends in average player loss per machine: casinos vs community venues, 1996–2005
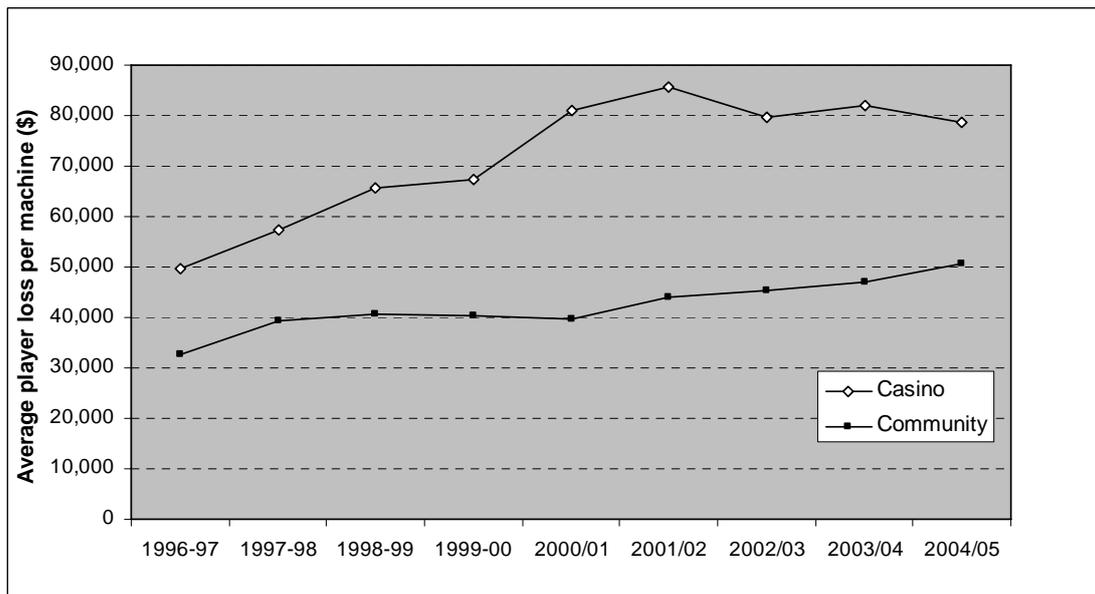
From Figures 5.3 and 5.4, it appears that the higher rate of player loss per machine in casinos is not explained by a sudden increase in the number of machines. Indeed, from the evidence in Figure 5.3, the opposite seems to be the case. After about 1999, the big rise in machine numbers was found in the community sector, while the casino machine numbers actually declined slightly between 1999 and 2002, although the average player loss per machine increased. After 2002 casino machine numbers further increased but earnings per machine remained constant. This may suggest that the casinos have reached a plateau in revenue per machine, with increased player loss generated by more machines rather than an increase in the average profitability of

machines. The community sector would appear to have some way to go before reaching such a plateau as average player loss per machine is still rising (Figure 5.4).

In conclusion, there is little evidence that the introduction and growth of community machine gaming has had an adverse effect on casino revenues from gaming machines. Rather, each sector (casino and community) has appeared to generate its own distinctive market features, with the two casinos continuing to outperform the community sector in terms of total machine revenue, average revenue per machine, and stability of revenue throughout the seasonal cycles, as suggested by the seasonal variability coefficient in Table 5.4 (i.e. 0.26 for hotels and clubs and only 0.12 for casinos). If anything, the interaction noted between the two sectors may be mutually supportive. The continuing growth of the two sectors suggests that taken in combination, the rapid expansion of the total numbers of gaming machines throughout the two sectors in the NT community has perhaps created a cultural shift in the tolerance of the NT population, or more correctly, the NT gambling community, for this form of gambling opportunity.

5.4 Socio-Spatial Enquiry into the Patterns of Player Loss in the NT

The number of machines is a useful indicator of aggregate trends in growth, but it is not particularly informative about the distribution or the regional magnitude of that growth or its variation within an overall NT pattern. As machines in different localities and regions have different rates of profitability, the gross number of machines hides this variation at the local level. A consideration of only gross machine numbers can also be misleading because the regulatory measure of 'capping' may restrict the number of machines to a level below actual market demand in some localities. Thus actual demand may be much higher than reflected in the machine numbers. Capping refers to the regulatory limit set on the number of machines any particular venue may have. In the NT this maximum is 45 machines in clubs and 10 in hotels. Due to this variation, it is necessary to examine the rates of player loss on a region by region or, better still, a venue by venue basis. This is particularly salient in the case of the NT because its demographic, social, and geographic structures are so unique. In particular, the NT is characterised by:

1. a high proportion of Indigenous peoples (29%), about two-thirds of whom live in remote communities;
2. the exposure of its small population to high rates of transience and seasonal tourism activity;
3. its relatively youthful age structure;
4. geographical and social divisions between the larger urban centres and the rural and remote regions; and
5. its vast distances.

This section is concerned with how the trends in poker machine gambling are affected by the unique social environment of the NT. This question is answered through an examination of the changes in the patterns of player loss since 1996 across venues in their local area and regional contexts. This analysis will attempt to identify the social variables that predict or are associated with the spatial patterns of observed poker

machine expenditure in community venues. The broader analysis was disaggregated into sections that address four specific questions:

1. What do studies of machine gaming in other jurisdictions reveal about the relationship between location, machine concentration and patterns of player loss? (Section 5.4.1)
2. How do the patterns of poker machine concentration in the NT community venues compare with those found in other Australian jurisdictions? (Section 5.4.2)
3. What are the social effects of 'concentration' (placing machines where they generate maximum yield) and of 'capping' the number of machines allowable in community venues? (Section 5.4.3)
4. Do the specific demographic features of the NT (such as the relatively large Indigenous as a proportion of the total population, low population density, relatively youthful profile, and seasonality of population influx) affect patterns of machine activity across different locations? (Section 5.4.4)

5.4.1 Previous Australian studies of gaming machine location, machine concentration and patterns of player loss

The overwhelming evidence from interstate studies indicates that gaming machine concentration is greater in areas of social and economic disadvantage and, by implication, the poorer sections of society are more likely to contribute to gaming revenue. These findings seem to generally hold true, though they are more strongly observed the more local the level of analysis (or scale), whether it be states, regions, local government areas, or local areas (suburbs). In addition to these social divisions is the possibility of more general contrasts between metropolitan and rural areas, a distinction of obvious importance in the NT context. These are reviewed in turn.

- **State-wide comparisons**

At the State level, the Productivity Commission reported 'an inverse relationship between income levels and the density of gaming machines in Victoria. This also applied in New South Wales and South Australia, but not in Queensland' (Productivity Commission 1999, 10.41, Table 10.6). The Commission also found that in Queensland, New South Wales, and South Australia 'there is a positive relationship between the number of gaming machines in a location and the amount of money spent on them, so the greater density of gaming machines in low income areas is not necessarily being compensated for by a lower spend per machine' (Productivity Commission 1999, 10.42). It was only in South Australia that there was found to be a positive significant relationship between income levels and the total amount spent on gaming machines. However, a more recent study compared Victoria and South Australia with Western Australia, which limits gaming machines to the Burswood Casino. This study indicated a much higher incidence of problem gambling (up to five times) in those two states which license hotels, clubs and other community venues (South Australian Centre for Economic Studies 2005b).

The Commission suggested, however, that provision of gaming services in poorer areas does not always translate into higher rates of participation, as people in those areas may lack transport to casinos, or prefer other methods of gambling such as race betting and lotteries. The Productivity Commission nevertheless concluded that 'it remains the case that, in two of the four States studied, gaming machines are higher in

economically disadvantaged areas and that, in turn, is likely to mean that people in those areas spend more on gaming machines than people in other areas' (Productivity Commission 1999, 10.42).

- **Metropolitan studies**

The strongest evidence that gaming machine concentration is highest in the lower socio-economic areas and regions comes from studies based on the large metropolitan areas of Melbourne, Sydney and Brisbane/Gold Coast. The Productivity Commission cited numerous submissions from church, peak voluntary (e.g. Clubs Victoria) and local government bodies that attested to the higher concentration of machines and venues with machines in areas with the lowest socio-economic index values (yielding a significant negative correlation of -0.77). These were reportedly associated with concomitant effects of higher rates of gambling behaviour, increased levels of poverty and bankruptcy, and family break-ups.

These investigations indicate an increasing trend for machine allocation to 'follow the dollar', often with little regard to the social and economic fallout of such a strategy. Marshall and Baker (2001) examined the relationship between machine concentration and socio-economic advantage across two geographic scales in Melbourne – Local Government Areas (LGAs) and Collection Districts (CDs) – the smallest census area consisting of between 200 and 300 households. The results demonstrated that the pattern of concentration in the least advantaged LGAs also held at the local CD level, when measured in terms of proximity and accessibility: 'Boroondara, the most advantaged LGA, with just 30 per cent of CDs less than one kilometre from a (gaming machine) venue', while 'in the least advantaged LGA, 68 per cent of Maribyrnong's CDs had such local access to a venue' (Marshall and Baker 2001, p.30). This polarising pattern of high provision in poorer areas and lower provision in more advantaged areas also appeared to be strengthening over time, since the introduction of gaming machines into Victoria in 1992 (Marshall and Baker 2001, p.32).

Marshall and Baker (2002) also carried out a comparative study of the same problem between this more recent market structure of Victoria with the much more mature Sydney machine gaming environment, where licensed gaming machine venues had been operating city-wide since 1956. They found a similar concentration in disadvantaged areas in each major metropolis, although there was a slightly different evolutionary pattern, explicable by the earlier saturation point in Sydney.

The rapidity with which the Melbourne market moved from an initial random allocation to one which reflected the lower-income concentration of Sydney areas was explained in the context of the recent legislative history capping. Specifically, the evidence from this study suggested that the legislated placement of machine caps in Victoria during the 1990s encouraged providers to maximise individual machine profits by relocating machines to low income areas. This process accelerated the concentration in areas of social disadvantage and produced the familiar pattern which closely resembled that of 'the more mature Sydney market' (Marshall and Baker 2002, p.283).

- **Rural areas**

Given the NT has no large cities and a large proportion of the population reside in remote, rural or small urban areas, of particular interest is the question of whether the

metropolitan patterns of gaming machine concentration in poorer areas are also found in non-metropolitan Australia. Unfortunately, the available evidence is limited, and concentrates on the social and economic effects of poker machines, rather than on the spatial distribution of machines. The overall conclusion of the Productivity Commission (1999, 10.49) was that country areas benefit from the increased activity, social interaction and entertainment options brought by machine gaming in hotels and clubs. This also applied to small towns which may enjoy increased opportunities for local project funding through community funding bodies (similar to the NT Community Benefit Fund).

In terms of the effect of the social environment on gambling patterns, there are some important differences that need to be considered in the unique context of the NT. Some of these differences may be listed as follows:

- because of the concentration of activity in towns and small cities, non-metropolitan areas are best approached by regional rather than a local or district basis;
- poker machines contribute to the 'pulling effect' of regional 'sponge' centres that absorb population from outlying districts, increasing the relative attractiveness of regional centres and reducing the viability of smaller localities (Productivity Commission 1999, 10.52);
- rural residents are more reliant on motor transport for access to recreational venues and the 'proximity effect', based on walking distance to a venue, is far less relevant to estimating accessibility and risk exposure;
- many rural areas have a much more unstable and vulnerable population base, due to combined seasonal effects of agricultural and extractive labour force demand and tourism, as well as higher rates of population loss;
- the uneven effects of drought and rural decline have produced wide variations in the fortunes of smaller urban areas, contributing to instability and volatility in local patterns of machine allocation; and
- country towns, particularly smaller ones, have far more socially mixed residential areas than those of metropolitan regions, rendering the socio-spatial polarisation at a neighbourhood or suburban area extremely problematic.

Due to the existence of these factors, the processes of gaming machine impact observed in metropolitan areas may not be manifest in the same way in the NT. In addition, there are other relevant important points of dissimilarity between metropolitan and non-metropolitan areas that may have important effects on gambling practices. These include factors such as age and gender structures, proportions of persons of Aboriginal and Torres Strait Islander descent, as well as seasonal effects of population influx through tourism on a small population base. All these factors require consideration in the context of the NT.

5.4.2 Comparison of patterns of poker machine concentration in NT community venues with other Australian jurisdictions

A generic predictive model (Figure 5.5) was developed to guide this analysis. This model hypothesises the relationships between different groups of independent, mediating, and dependent variables that may be statistically examined for significance and predictive power. In other words, the model may be used to explain how access to community gambling venues might be translated into patterns of player loss when set

against a range of social and demographic contexts. By applying this model, specific questions that could inform licensing policies in this area may be answered. The generic model (Figure 5.5) specifies three main blocks of variables:

1. gaming outcomes, such as the rate of player loss per head of local population;
2. venue-specific factors such as the number of machines and the type of venue;
3. background socio-spatial and demographic factors.

The model was applied at three different spatial levels:

1. the level of the individual venue;
2. the local area level, where the scores for all the venues were aggregated;
3. the regional level, which aggregated local area values.

Figure 5.5: A Generic model predicting community gaming machine outcomes
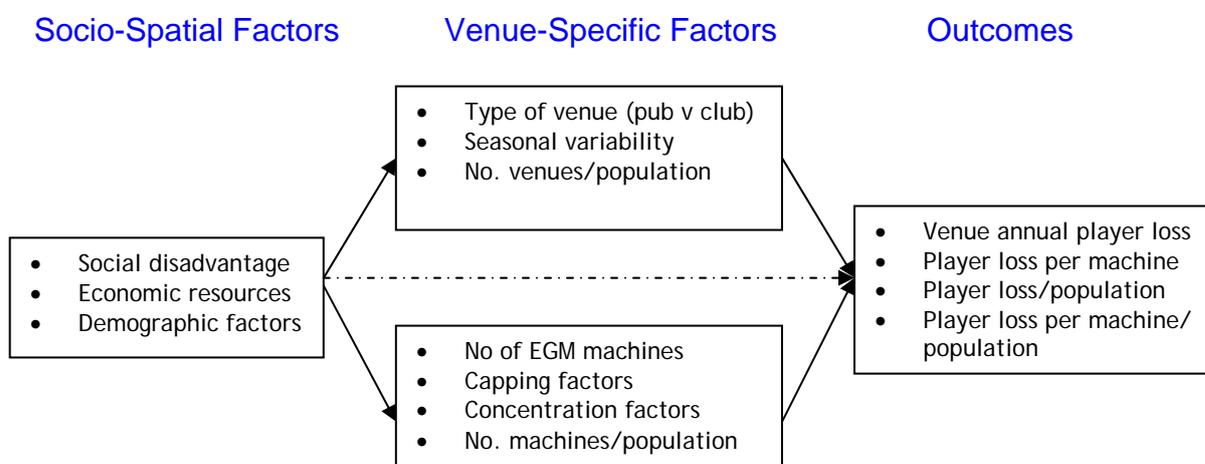
With reference to the model, it is possible to explore how the socio-spatial patterns of machine gaming in the NT are influenced by local socio-economic factors, demographic factors, machine numbers and 'concentration', venue type (hotel or club), capping limits, and seasonal variations in gaming activity. The problems addressed in this analysis follow closely that of the Productivity Commission (1999), namely the relationship between socio-spatial disadvantage, machine concentration and rates of player loss. In addition, it will be important to consider some of the effects of the different population mix of the NT on these patterns, particularly at a local area level. In other words, the analysis must take into account the distinctive features of the NT, as well as the similarities that may be gleaned from the patterns found interstate, particularly in non-metropolitan areas. These relationships can therefore be operationalised in terms of the following questions:

1. In the NT, are gaming machines concentrated in sites (venues, local areas, regions) of lower economic resources?
2. As a consequence, are rates of player loss per machine in the NT greater in sites (venues, local areas, regions) of lower economic resources?

- **Machine concentration and player loss in venues**

The Index of Economic Resources (IER), developed from the Census as part of the Socio-Economic Indexes for Areas (SEIFA), 'reflects the profile of the economic

resources of families within the areas. The census variables which are summarised by this index reflect the income and expenditure of families, such as income and rent. Additionally, variables which reflect wealth, such as dwelling size, are also included.' (Australian Bureau of Statistics 2001b, p.4). It was chosen as the measure for economic resources available to each Statistical Local Area (SLA). A SLA is a geographic unit defined by the ABS for Census purposes that is usually the geographic size of an urban suburb. The processing of data, description of variables, and the rationale for the choice of the IER are set out in Appendix D.

Figure 5.6 shows the relationship between the IER and the average number of machines licensed to venues between 1996–97 and the financial year 2004–05. To qualify for this analysis, as for other averaged data, venues had to have at least three years of valid data, which yielded 67 usable venues. For the sake of easy reference, only some of the community venues are labelled at random. The IER is based on the Statistical Local Area in which the venues are located.

Figure 5.6: Scattergram of average number of machines (1996–2005) per venue by SEIFA Index of Economic Resources for SLA (unweighted data)
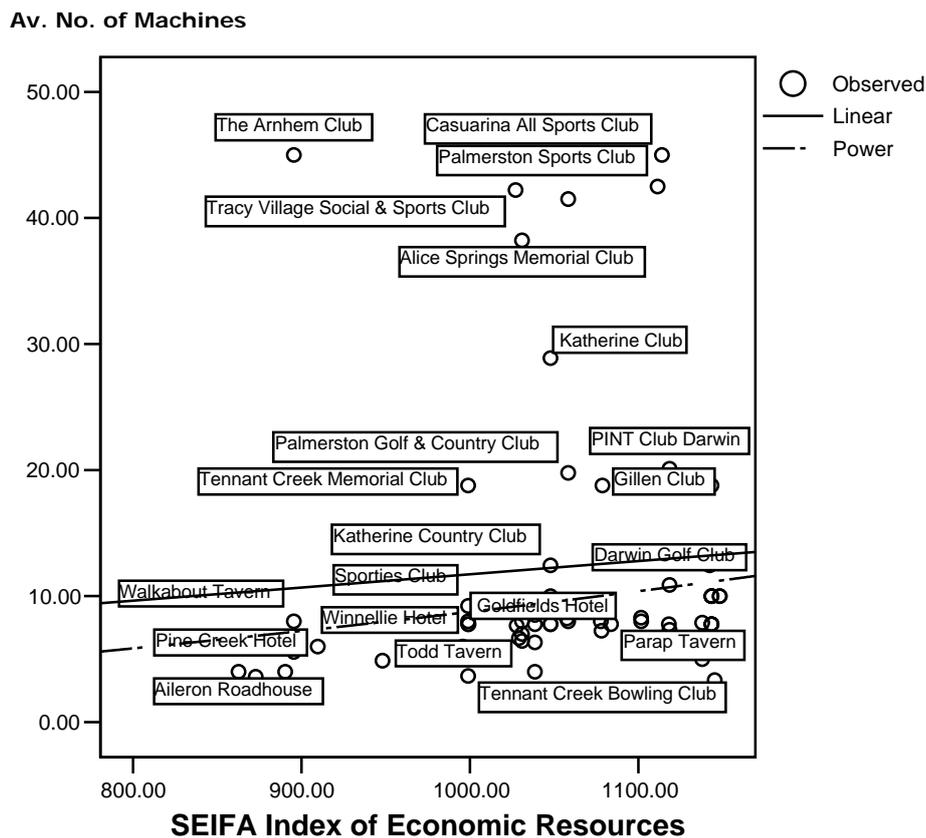
Figure 5.6 illustrates a mildly positive, rather than a negative, relationship between average number of venue machines and economic resources of the venue's SLA. The pattern is quite scattered and is not totally linear as indicated by the curvilinear (power) transformation which best fits the distribution, but which does not quite achieve normal level of statistical significance (F=2.86, df=65, p=.096). A non-parametric measure of association between SEIFA and the average number of

machines per venue yielded a significant positive statistical association (Spearman's rho=0.244, p=0.046).

The direction or sign of the trend relationship is interesting in that it shows an absence of the concentration of machines in the poorer areas. Rather than *decreasing* with higher levels of economic advantage as occurred in the Sydney and Melbourne cases, in the NT, the average machine numbers tend to *increase* with the level of economic resources of the surrounding locale. Clearly there is little evidence here of machine allocation 'chasing the lower socio-economic dollar'. Rather, there is some suggestion that the opposite may indeed be the case.

Figure 5.7: Scattergram of average reported gross revenue per venue (1995–2005) by SEIFA Index of Economic Resources (unweighted data)
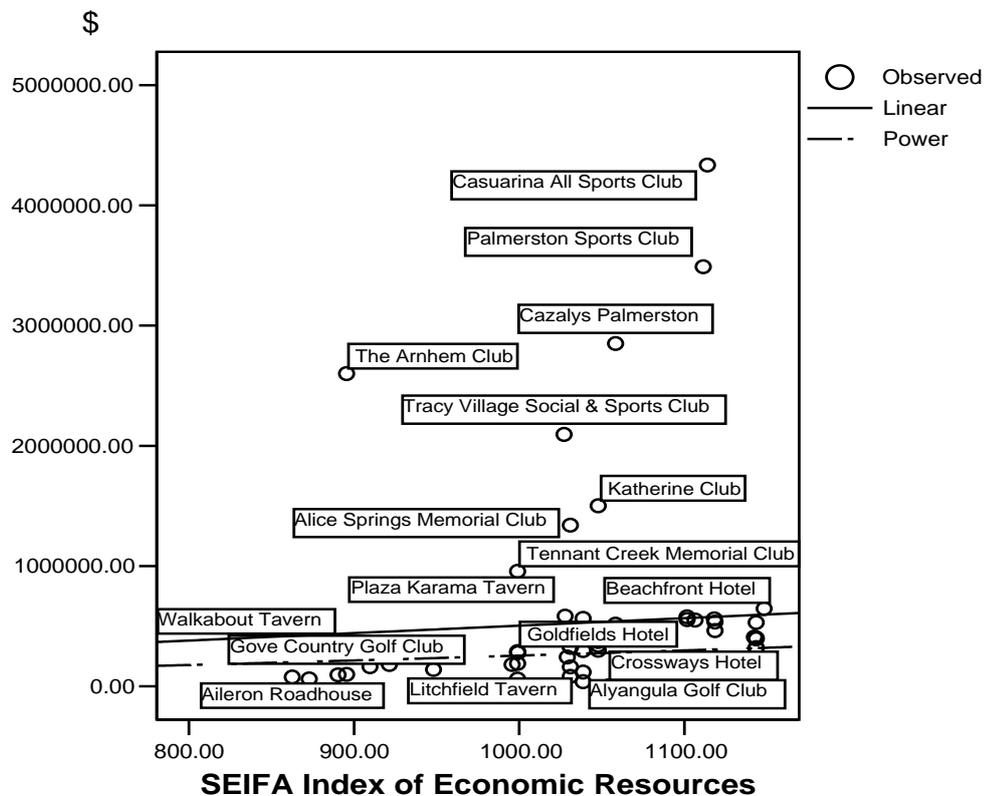
Figure 5.7 illustrates that the higher number of machines located in more advantaged areas translates into higher levels of average annual revenue in those areas. It is important to note that the higher venue earnings observed in more advantaged regions are largely confounded by (and possibly partly explained by) the close relationship between the number of machines and average annual revenue (Figure 5.8). It is clear from the very high linear relationship between these variables (yielding a correlation coefficient of +0.90) that it is the number of machines per venue that has the most direct or unmediated impact on profitability at the level of the individual venue. In terms of the model of Figure 5.5, it would appear that the other determinants of player loss - such as the economic environment of the venue or the way a venue may market itself, tend to exert an indirect effect, being mediated almost entirely through their prior influence on levels of machine concentration.

Figure 5.8: Scattergram of average gross revenue by number of machines per venue 1996–2005 (unweighted data)
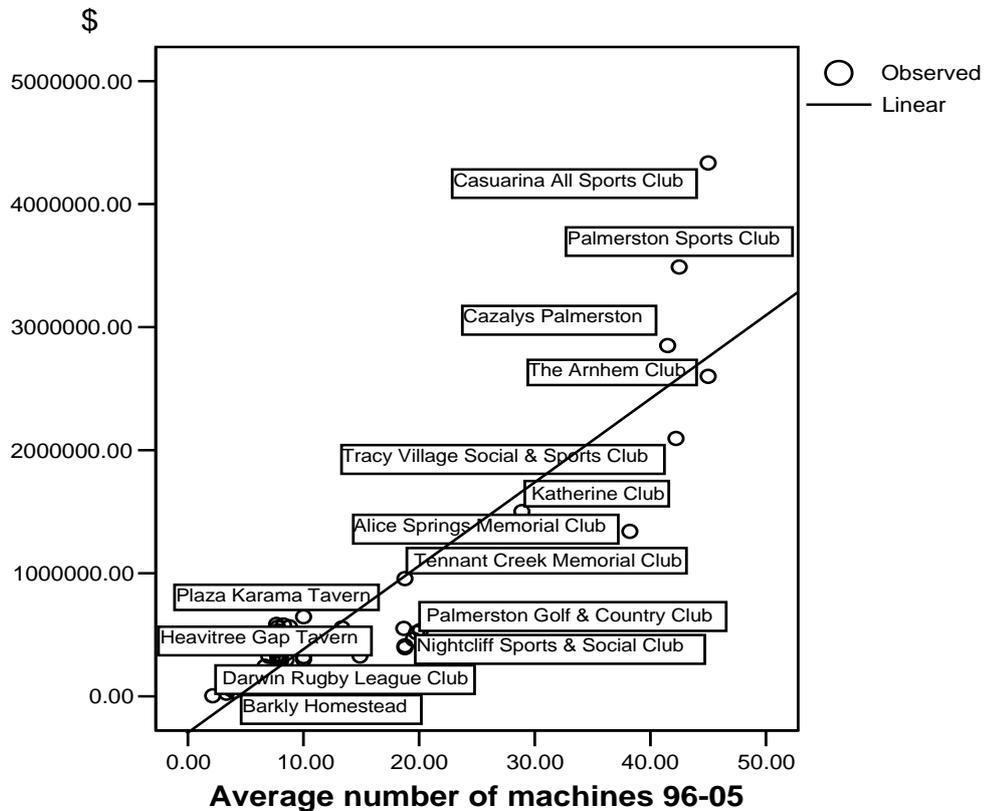
To summarise this subsection, it would appear that there are main two findings:

1. that not only is there no evidence to support the interstate findings of machine concentration in the poorer areas, in the NT gaming machines show a slight tendency to be concentrated in *more advantaged*, rather than less advantaged areas; and

2. that *the numbers of gaming machines* are by far the strongest direct predictor of venue profits, which translates the (positive) effect of economic advantage on machine concentration into higher levels of player loss.

- **Machine concentration and player loss in local areas**

This subsection explores the extent to which the patterns identified so far at the venue level stand up when aggregated across entire SLAs. To achieve this, values for all the venues were aggregated to yield a bigger picture at a SLA level (n=35 for those areas with licensed venues). Figure 5.9 displays the relationship between the economic resources of a local area and the total number of machines per head of estimated resident population in the same year (2004–05). This is a strong positive relationship (r=+0.73, p=0.000, n=35). It indicates that higher levels of machine concentration tend to be found in areas of higher economic resources. In the urban areas of the NT, it is economic advantage that generates higher machine densities and consequently higher revenues. By contrast, the remoter, generally poorer areas, host venues that are characterised by fewer machines and lower levels of player loss. In fact, the NT presents an inverted image of the socio-spatial patterns of gaming activity as portrayed in the recent Australian research literature.

Figure 5.9: Scattergram of number of machines per head of estimated resident population by SEIFA Index of Economic Resources (SLA Aggregated Data, 2004–2005)
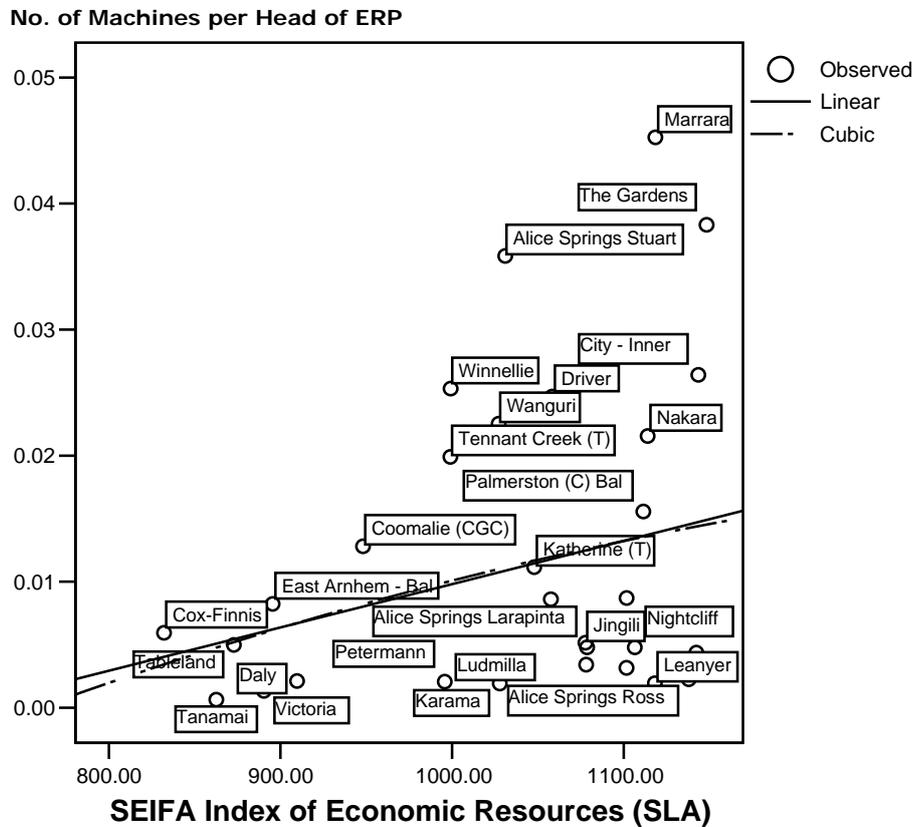
- **Machine concentration and player loss in NT regions**

This subsection explores how the pattern of concentration of machine and player loss levels in the more affluent locations stands up when aggregated across the larger statistical units that define NT regions (i.e. Statistical Subdivisions or SSDs). This test brings the population size closer to that analysed for other jurisdictions and therefore may be of wider general interest. The data for each of eight regional areas were aggregated and rates of machine concentration and player loss per head of estimated resident population were calculated. These were then associated with the mean of the SEIFA Index for Economic Resources, based on their constituent SLAs. Although not all local areas on which the regional figures are based have licensed venues, the data base here represents about 65% (127,497) of the estimated resident population of just over 200,000.

The scattergram (Figure 5.10) shows the relationship between the IER and machine concentration. Despite the small number of SSDs, the correlation is positive, though not significant (r=+0.45, p=0.16, n=11). The trend towards concentration in the more affluent regions is therefore confirmed at this higher level of aggregation, with an obvious contrast between Darwin City and the remoter subdivisions. As for the level of the venue and SLA, the regional concentration of machines is strongly correlated with player loss (revenue) per head of estimated resident population (r=.88, n=11, p=0.0001).

Figure 5.10: Scattergram of number of machines per head of estimated resident population by SEIFA Index of Economic Resources – statistical subdivisions of the Northern Territory with licensed community venues

No of Machines per Head of ERP
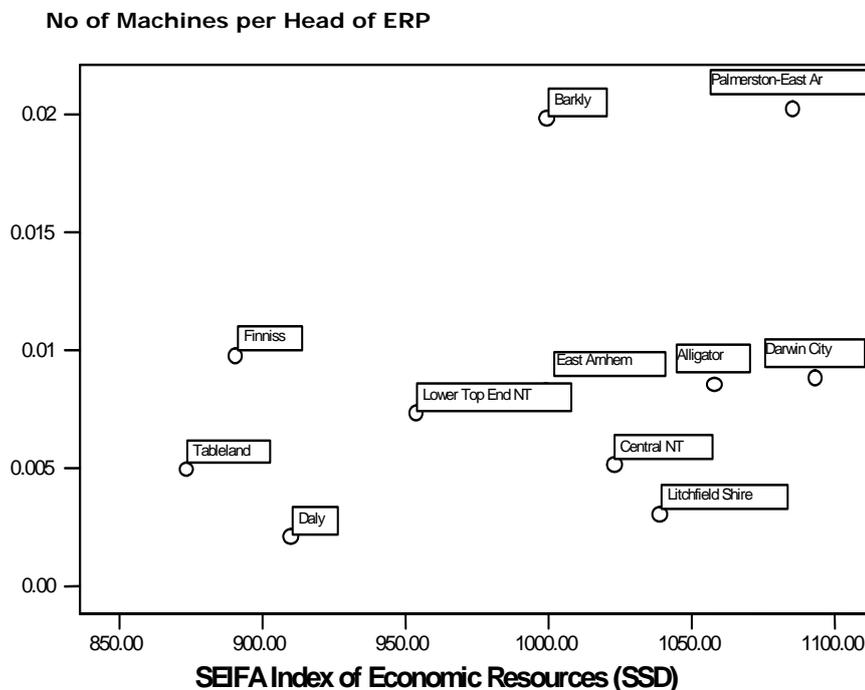
Thus from these analyses at the level of the venue, the level of the local area, and the level of the region, there is no evidence to suggest that poker-machines or poker-machine revenues are concentrated in areas of relative economic disadvantage. In fact, the analyses show the quite the opposite, that there is a positive relationship between poker machine activity and the relative affluence of areas in which they are located, and that this relationship is strongest at the level of the local area.

It is important to interpret these patterns against the relatively small and distinctive demographic features of the NT. In the NT urban contexts, the wide and less socially homogeneous catchment areas may disrupt the tighter relationship between location and clientele found in the southern Australian markets, where proximity is a crucial clientele-defining factor (Marshall and Baker, 2001). Venue location may very well depend on the existence of a previous facility such as a hotel (e.g. the very profitable Casuarina All Sports Club, formerly the Casuarina Tavern). In other words, patterns of player loss in the NT appear to be determined by a somewhat different mix of regulatory, geographical and market forces to those found in the major Australian cities.

It is not surprising, in jurisdictions with such a high demographic contrast between poorly resourced, sparsely populated, remote regions, and an affluent and highly urbanized population (over half located in Darwin and surrounds), that the socio-spatial distribution of machine gaming activity should diverge from that of the major metropolitan centres. The inverted pattern of socio-spatial effects suggests that the differentiated demographic factors associated with country and regional areas may be

significantly affecting patterns in the NT, creating a fundamentally different socio-spatial environment.

Another possible explanation, at least in part, is that the market is not yet driven by demand issues (i.e. by poorer people) but rather is still displaying the characteristics of a developing market which is supply constrained (i.e. revenues are still increasing as more machines are put into venues). This suggests more detailed analyses looking for temporal changes in the pattern of the revenue/machine/SEIFA relationships may be a useful future area of analysis.

5.4.3 Social effects of machine 'concentration' and 'capping'

Behind the obviously strong relationship between machine numbers and the levels of player loss lie two relationships which are of central importance to licensing policy. The first is a 'concentration' effect, whereby the higher yields per machine are produced by increasing the total number of machines per venue. In other words, in certain contexts, there appears to be some kind of synergy at work that, instead of spreading existing revenues equally among the greater number of machines, actually increases the total amount lost. This counter-intuitive effect results in the relocation of licensing machines from low yield to high yield venues, with mutual gains for both the original licensee and the new host venue. This effect perhaps lies behind all spatial patterns of machine distribution, whether in poorer, or in richer locations.

While the concentration effect is one that appears to be market-generated (i.e. in response to demand), the second effect of 'capping' is regulator-generated (i.e. by limiting supply). The legislated limitation on machine numbers whether statewide, regional or venue-specific (as in the case of the NT where hotels are capped at 10 and clubs at 45 machines) produces its own effects on the patterns of player loss by limiting opportunities for gaming. Capping is imposed as a way of reducing exposure by individuals and communities to the risk associated with excessive gambling.

However, these restrictions may have the unintended consequences of actually increasing concentration in poorer areas where the concentration effect appears to be most profitable. This effect has been noted by Marshall and Baker, in the case of the evolution of Melbourne machine gaming markets, who found that 'the placement of state-wide EGM caps appear to foreshadow sharp increases in the EGM polarization process' (Marshall and Baker 2002, p.283). As noted earlier, it appears that this policy probably accelerated the shift from an initially random socio-spatial allocation of machines to one where more machines were located (subject to saturation levels) in less advantaged regions. The subsections below explore the interaction between 'machine concentration' and 'venue capping' in the NT gaming machine market.

- **The 'concentration' effect**

The pattern for hotels (Figure 5.11) shows a clear linear relationship between higher rates of return per machine and number of machines per venue. From the labels on the individual venues, it is apparent that the higher average machine yields were found in the established Darwin region, while the more remote venues show far lower yields per machine. Whether increasing the number of machines in these smaller venues would increase average yield is doubtful as demand is likely to be insufficient. There does however, over time, appear to be a definite drift towards maximum allowable numbers. By 2004–05 the majority of hotels (25 out of 34) had reached their ceiling

of ten machines. For clubs (Figure 5.12) the pattern of concentration is even more pronounced (r=0.84 as against r=0.56 for hotels). The 'drift to the ceiling' is also less pronounced, with only 7 of the 68 club venues attaining the maximum of 45 machines by 2004–05. Again, it is the larger Darwin and Palmerston based clubs that show both the highest yield per machine and the highest concentration. The concentration effect therefore appears to be real in the NT and is a major consideration when developing licensing policy.

Figure 5.11: Scattergram hotels: average player loss per machine by number of venue machines (1995–2005)
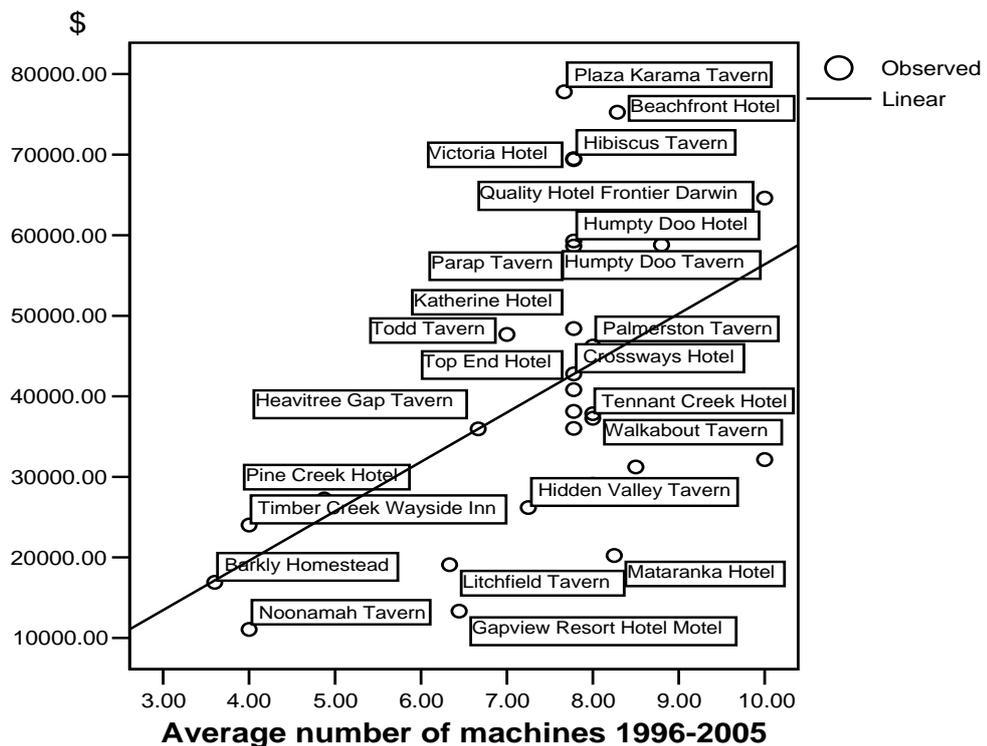
Figure 5.12: Scattergram clubs: average player loss per machine by number of venue machines (1995–2005)
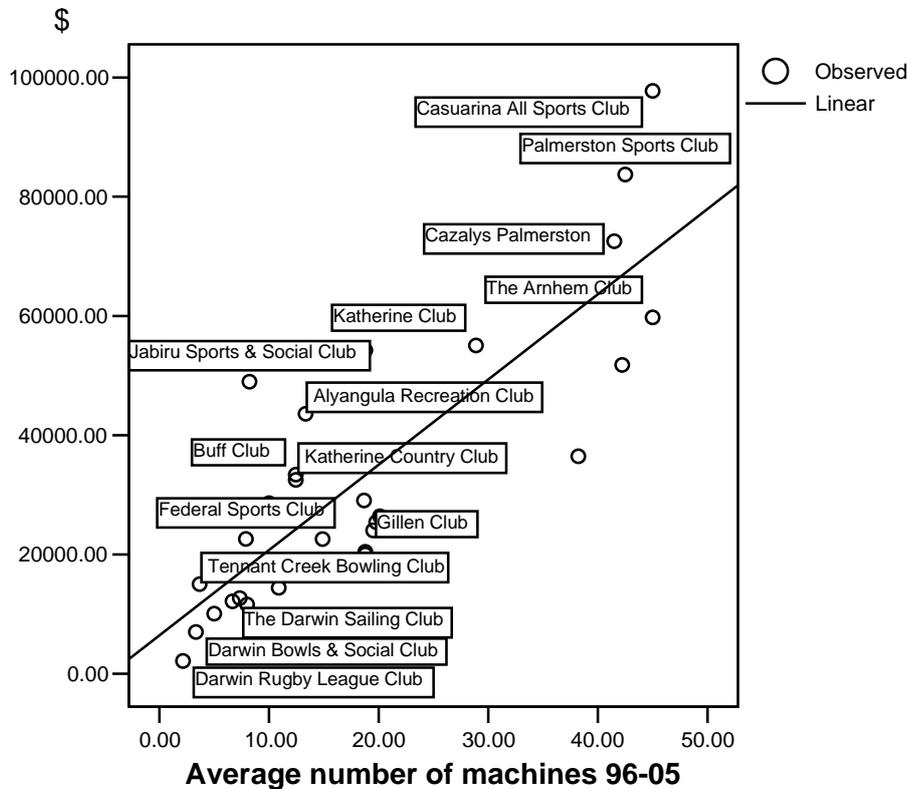
- **The 'capping' effect**

'Capping' the number of machines at 10 in hotels and 45 in clubs directly affects the rate of player loss per machine at differing levels of machine concentration (Figures 5.11 and 5.12). Over the years observed, the average effect of adding an extra machine to either hotels or clubs has produced a proportionate increase in revenue. The yield per extra machine appears to be significantly higher for hotels than for clubs. This may explain why so many venues in the hotel sector move fairly rapidly to the ceiling of 10 machines. It appears that an extra machine in a hotel will yield several times the equivalent yielded in a club venue.

What might the effect be, however, should the present caps be removed? Because over 70% of hotels are now operating at their maximum level of machine allocation, they are obviously undergoing some form of 'ceiling stress'. Should the 'lid come off' many of these venues, it is highly likely that the 'concentration' effect would be activated, and that their average yield per extra licensed machines would increase, thus generating a higher overall venue profit. Again, for clubs, since the linear model appears to hold fairly well over time, the effects of cap removal would probably not be quite so dramatic, but would surely be noticeable for those seven or so clubs that are already at their peak levels of machine concentration (i.e. at 45 machines).

The present caps for hotels at the top of their ceiling represent considerable distortion of the gaming machine market and are probably the source of congestion at busy

times and possible user frustration. Given the generally more exclusive, family-friendly atmosphere of the clubs over the hotels, this inference suggests that lifting the cap on hotels would be more likely to produce a more regressive effect than lifting the ceiling on clubs. This prediction is supported by the large difference in the socio-spatial location of each type of venue in the NT as shown in Figure 5.13. This difference approaches statistical significance at the 95% level of confidence. Though each type scores above the national average (i.e. 1000) on this index, it is clear that clubs are located on the whole in more advantaged local areas. The full social implications of this finding remain to explored by further research into the socio-economic characteristics of clientele profiles in each type of venue.

Figure 5.13: Error bar of venue type by mean score of SEIFA Index of Economic Resources

Bars show the 95% confidence intervals of index score means
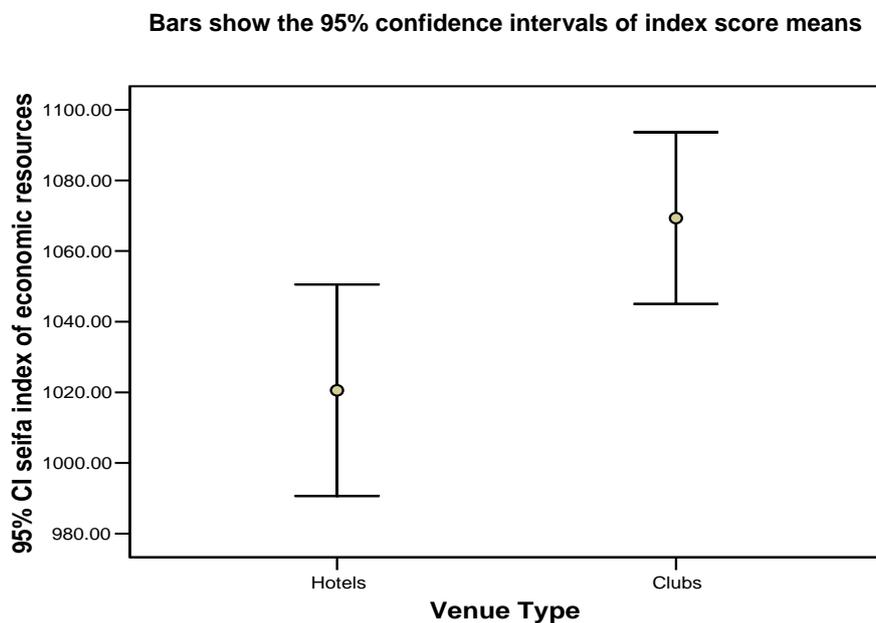
Therefore, it may be concluded that machine concentration and legislative intervention in the gaming machine market of the NT exert interacting influences on the levels of player loss. In contrast to the patterns in metropolitan areas, however, the tendency to relocate machines in the more lucrative, less advantaged and working-class frequented venues is moderated or cushioned by two factors. First, the caps on hotel numbers, although operating at near-peak levels of concentration, limit gambling opportunities. Second, the effect is tempered by the overall affluence of venue locations in comparison with national averages. However, the hotel caps do represent a real danger of repressed demand and their loosening could result in a reversal of the relatively benign patterns of socio-economic impact observed so far in the gaming markets of the NT.

5.4.4 Spatial patterns of machine concentration and average machine loss in the NT demographic context

It remains to submit all these factors – regional characteristics, venue type, concentration and capping effects – into an integrated framework that will enable all the effects specified in the generic model of Figure 5.5 to be estimated

simultaneously. This technique (multivariate regression) enables the researcher to test the independent effect of each variable (independent or predictor variable) on a specified dependent or outcome variable. In this case, the outcome is the average revenue per machine in each SLA, while the predictors will be those already investigated (such as the total number of machines per SLA and the average level of economic resources). Several other predictors were added that represent demographically aspects of the local areas in the NT. They were:

- per cent of Indigenous persons
- per cent of persons 41 years and over
- per cent of males
- proportion of clubs among all community venues (i.e. clubs plus hotels)
- monthly variation in revenue variable (the averaged coefficient of variation for monthly revenues for all gaming establishments in the SLA). This was derived by dividing the standard deviation of monthly player loss by its annual mean value. A higher coefficient reflects greater monthly fluctuation in player loss. It represents an attempt to capture seasonal effects caused by tourist influx and other environmental variations.

The horizontal bar chart (Figure 5.14) shows the various strengths, signs and significance levels of each of the seven predictors of the average machine loss in the 35 SLAs of the NT when all the others are 'controlled for'. This shows that four of the predictors are worthy of attention, three of which reach statistically significant levels of effect. The number of machines, as one might expect, maintains its positive influence on average player loss per machine from previous analyses (the concentration effect), as does the economic resources of the area (reverse effect from other jurisdictions), while two variables exert a negative influence.

First is the proportion of clubs. Clubs, taken generally, have a lower player loss per machine than hotels. Therefore, where there a higher ratio of clubs to hotels in one area compared to another, the player loss per machine will be lower in that area. This indicates that hotels, as they have a higher yield per machine, may represent a form of unmet demand indicated by the effect of capping. Second is the extent of monthly variations in gaming activity (as indexed by the coefficient of variation). This indicates that venues which are least vulnerable to seasonal effects are most profitable. This may indicate that it is the constant local traffic which sustains average machine performance, rather than seasonal peaks caused by population influx. This is an interesting finding and deserves further exploration.

The three demographic predictors (percentage of persons 41 years and over, the percentage of males, and the percentage of Indigenous persons) did not reach statistical significance. This shows that it is the factors operating at the level of the individual venue, including the type of venue, the number of machines, and the monthly variation in trade that are important, with the socio-demographic characteristics of the areas in which venues are located playing a minor, indirect role. It is worth noting that this measure of the Indigenous population effect presented here is probably obscured, since about two-thirds of Indigenous people are residents of remote communities or small towns, which have only a few, if any, licensed venues. The participation of Indigenous people is therefore poorly estimated in this kind of socio-spatial analysis, and is more accurately captured by studies of seasonal migrations to larger centres, combined with observational and case studies.

Figure 5.14: Results of a regression analysis predicting average player loss per machine (SLA aggregated data, 2004–2005)[a]
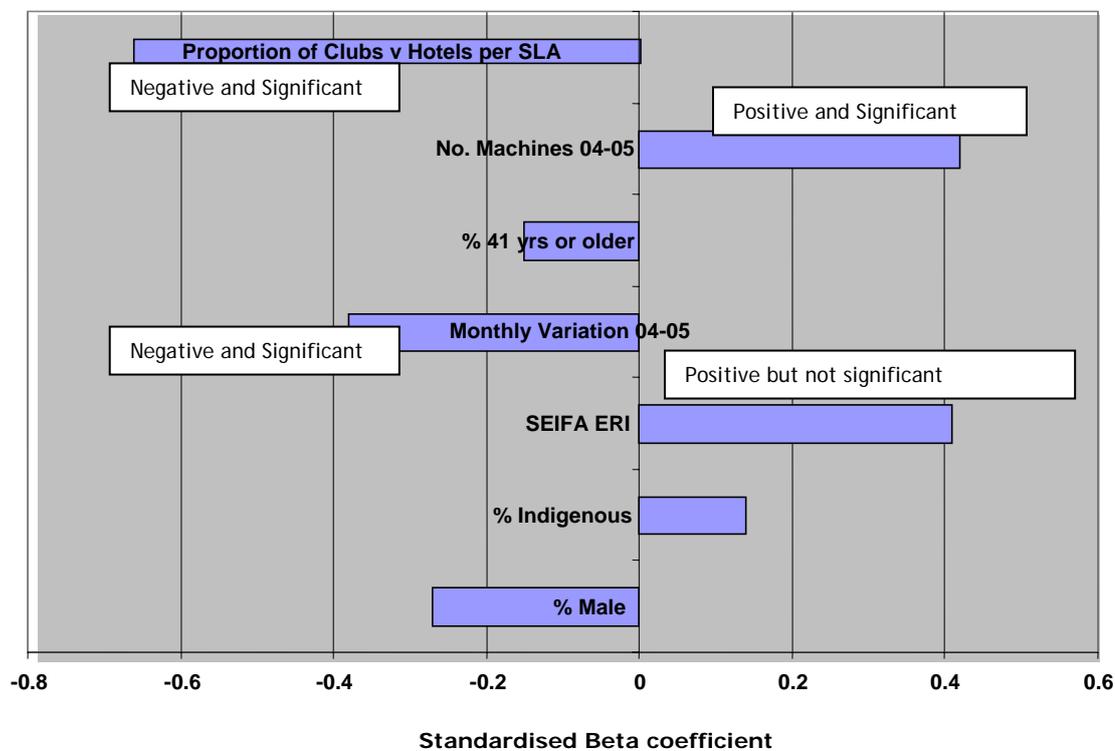
Note: [a] For full results, see Appendix D Table 1

In conclusion, it is apparent that the most powerful predictors of this important gaming outcome (average player loss per machine) are to be found in industry-specific and venue-specific variables such as machine concentration, the capping policy, and venue type. Socio-spatial effects appear to be secondary in importance (though not statistically significant in this model). Of least importance appears to be the demographic factors (age and gender structure, and proportion of Indigenous peoples). The salience of industry-specific factors therefore provides a rich field for policy development, provided that it is attentive to those factors unique to the NT and avoids the temptation to impose onto local patterns the findings of the research literature based on entirely different populations and contexts.

6. Community Attitudes towards Gambling

Community attitudes towards gambling were assessed by the telephone survey in three ways. First, following the lead of the Productivity Commission, the perceived net community benefit of gambling was assessed by asking all respondents if they thought gambling did more good than harm for their local community. The purpose of this question was to gauge overall perception of the societal impact of gambling. Second, community perceptions of the number of poker machines was assessed by asking if the number of machines should be increased, stay the same or be decreased in each type of gambling environment (i.e. hotels, clubs and casinos). Poker machines were specifically targeted as they account for the bulk of gambling expenditure in the NT (see Chapters 4 and 5). They also represent the most significant change in the gambling landscape in the last decade, with poker machines proliferating in community venues (hotels and clubs) since their introduction on 1 January 1996. Third, the specific perceived social impacts, both positive and negative, of the introduction of poker machines was assessed by asking respondents in an unprompted way what they thought the benefits and drawbacks were. The results of each set of questions are presented in Sections 6.1 to 6.3.

6.1 Perception of the Community Benefit of Gambling

Figure 6.1 presents the percentage of the NT population, separated by gambler type, and their level of agreement with the statement 'that gambling does more good than harm for the local community'. Overall, over 70% of the NT population disagreed with the statement that gambling does more good than harm, while approximately 15% agreed with the statement (the remainder did not express an opinion). Almost half the population strongly disagreed with this statement. Non-gamblers showed a higher level of disagreement than non-regular gamblers and regular gamblers. Conversely, regular gamblers were twice as likely as non-gamblers to agree that gambling does more good than harm. Thus, the more people participate in gambling, the more positive their perception of the net community benefit of gambling. However, regardless of an individual's own participation in gambling, very few people strongly agreed with the statement that gambling does more good than harm for the local community.

To place this information in a broader context, Figure 6.2 presents the results of the Productivity Commission's 1999 survey on which the NT question was based. Two cautionary points need to be made about this comparison. First, the comparison is with 1999 results that may have changed considerable in the ensuing seven years. Second, the Productivity Commission's original question was modified to make it more specific. The phrasing '…harm for *the* community' was changed to '…harm for *your local* community'.

Figure 6.1: Percentage of gambler type and their level of agreement with the statement 'that gambling does more good than harm for the local community'
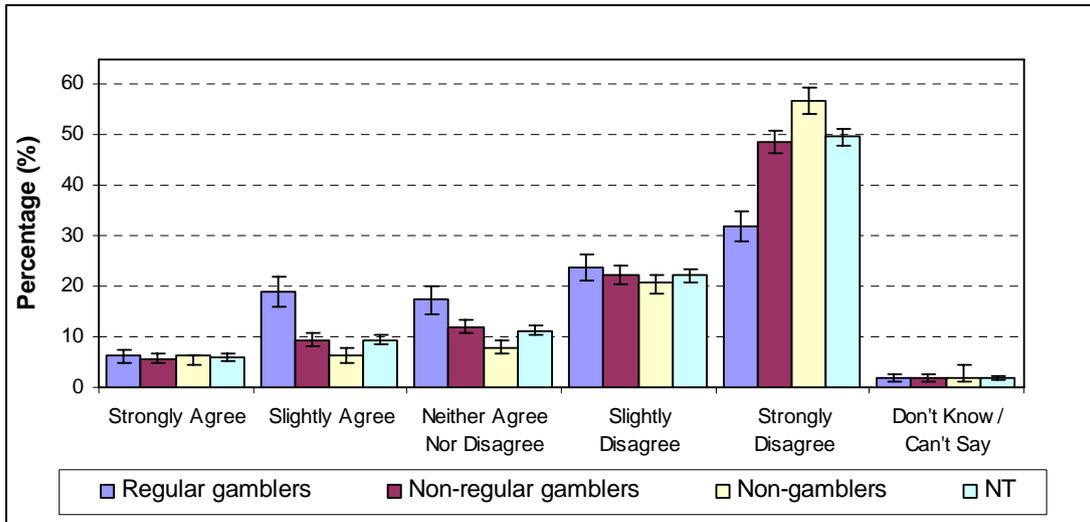
Even with these possible sources of variation, Figure 6.2 illustrates a remarkable resemblance between community perception of the net community benefit of gambling across all gambler types at the national and NT levels. This suggests that perceptions of the net community benefits of gambling may be relatively consistent across jurisdictions and across time. The most notable difference between the NT and the Australian samples was that fewer non-gamblers in the NT disagreed with the statement compared to non-gamblers surveyed nationally in 1999. Specifically, around 15% more people at the national level strongly disagreed with the statement. Overall, this is a relatively small difference.

Figure 6.2: Percentage of gambler type and their level of agreement with the statement 'that gambling does more good than harm for the local community' for Australia, 1999
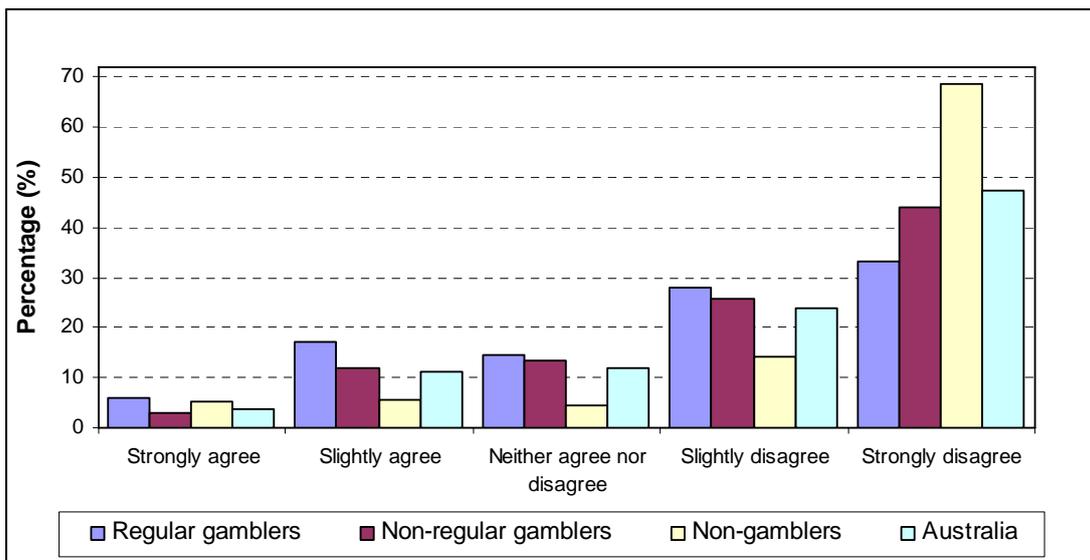
Note: Based on the Productivity Commission's 1999 question: What do you think of the statement that overall, gambling does more good than harm for the community?
Source: Productivity Commission 1999, 10.24.

To provide an idea of how perceptions of the net benefits of gambling in the NT may have changed over time, Figure 6.3 compares the entire NT sample with the results of the Productivity Commission's 1999 NT sample. Again the results of the two surveys are remarkably similar. There are some minor differences between the proportion of respondents agreeing with the statement. A greater proportion agreed in the 2005 survey compared to the 1999 survey. In addition, a smaller proportion remained neutral in the 1999 survey. While, as pointed out earlier, these comparisons should be treated with some caution, Figure 6.3 does suggest that overall there has been no significant changes in community perception of gambling benefits in the NT between 1999 and the present.

To explore this avenue further, it is instructive to consider the results of the community attitude surveys conducted by McMillen and Togni in 1996 and 1998 for the NT. These found that a large majority of respondents in both the 1996 (64.5%) and 1998 (62.3%) surveys disagreed with the statement that 'introducing poker machines will benefit the community (McMillen and Togni 2000, p.212). While no direct comparison can be made with the current survey, the earlier work indicates that a sizeable majority similar to present day levels did not agree that the introduction of gambling activities, in this case poker machines, would benefit the community. In fact, when considering all three surveys discussed here, it is apparent that the majority of the NT population does not agree that gambling is a positive benefit to the community, and that this perception has remained relatively steady over time.

Figure 6.3: Percentage of population and their level of agreement with the statement 'that gambling does more good than harm for the local community'
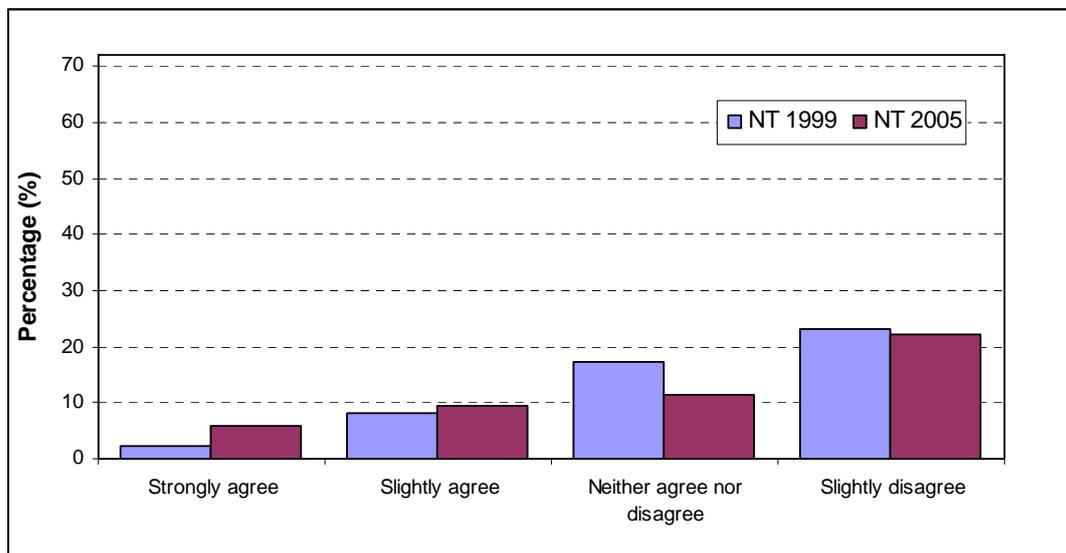
Notes: [a] Based on the Productivity Commission's 1999 question: What do you think of the statement that overall, gambling does more good than harm for the community?
[b] Based on the NT Gambling Prevalence 2005 question: What do you think of the statement that overall, gambling does more good than harm for your local community?
Source: NT Gambling Prevalence Survey 2005 and Productivity Commission 1999, 10.24.

The current survey demonstrated that despite the perception that gambling is not an activity that benefits the community, 72% of respondents actually gambled in the 12 months leading up to the survey. When purchases of raffle tickets are included in the definition of gambling the participation rate climbs to 85%, although for the purposes

of the survey only those who bought raffle tickets were defined as non-gamblers. This seeming contradiction between negative perceptions of the social benefits of gambling and the high participation rate may be partly explained by the social distribution of the harms of gambling. Specifically, the negative consequences of problematic gambling participation are largely experienced by a relatively small proportion of the population. In other words, while most people perceive gambling to offer very little in the way of the community good, the majority of people gamble without serious, adverse personal consequences. This finding also recognises that gambling is a risk-taking activity in which individuals are prepared to participate despite the perceived lack of positive consequences for the broader community. What is surprising is the significant majority of the community that believes gambling provides no net community benefit.

6.2 Perception of the Number of Poker Machines

The survey asked all respondents whether they thought that the number of poker machines available in their local community should be increased, decreased or stay the same. The response was equally divided on whether the number should stay the same or be decreased (both around 45%) (refer to Figure 6.4). One-third of the total responses supported a large decrease in the number of machines. Overall, there was little support (between 1% and 2%) for any increase in the number of poker machines.

While almost half of all gamblers thought the number of poker machines should remain the same, almost 30% of gamblers supported a large decrease in the number of poker machines. Interestingly, there was little difference between regular and non-regular gamblers, suggesting frequency of gambling is less important than general participation in so far as a link with attitudes is concerned. Non-gamblers were more likely to support a large decrease (over 40%), and less likely to think the machine numbers should stay the same than their gambling counterparts (just over 30% compared to 50%). Again, participation in gambling is associated with more favourable attitudes towards it.

Figure 6.5 presents the same information separated by region. It is evident from this figure that there exists little difference in community attitudes to the numbers of poker machines by region. This is interesting in a sense as the question specifically asked if 'the number of poker machines and other gaming machines currently available *in your local community* should be increased, decreased or stay the same?'. Therefore, regional differences may be expected to emerge as there are different numbers of machines in each area. The only noticeable regional difference occurred with Katherine, where slightly fewer residents supported a large decrease in the number of machines than in the other centres, while slightly more favoured a small increase. This difference was however minor. The general pattern was very consistent across the five areas sampled.

Figure 6.4: Percentage of gambler type and their agreement with the question 'do you think the number of poker machines currently available in your community should increase, decrease or stay the same?'
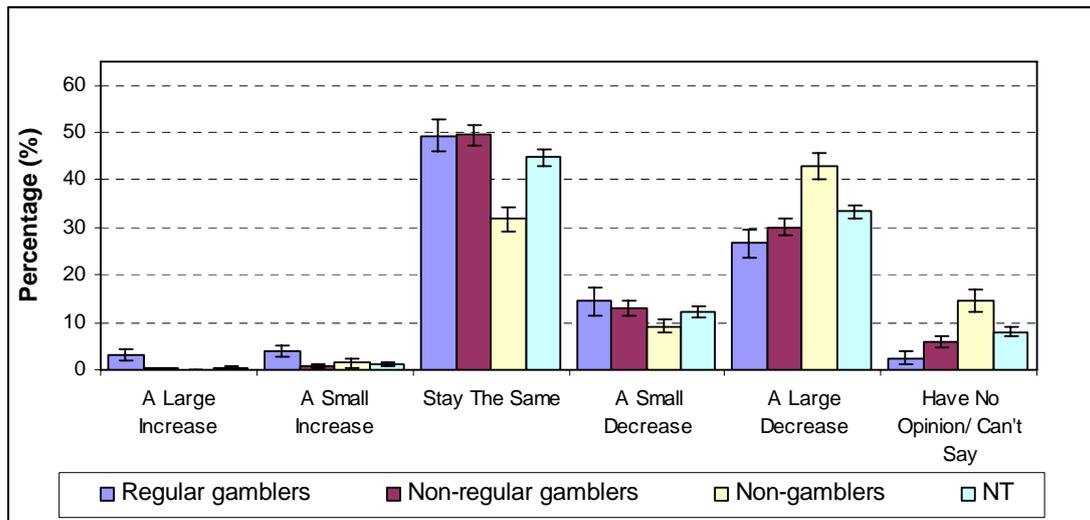
Figure 6.5: Percentage of Region and their agreement with the question 'do you think the number of poker machines currently available in your community should increase, decrease or stay the same?'
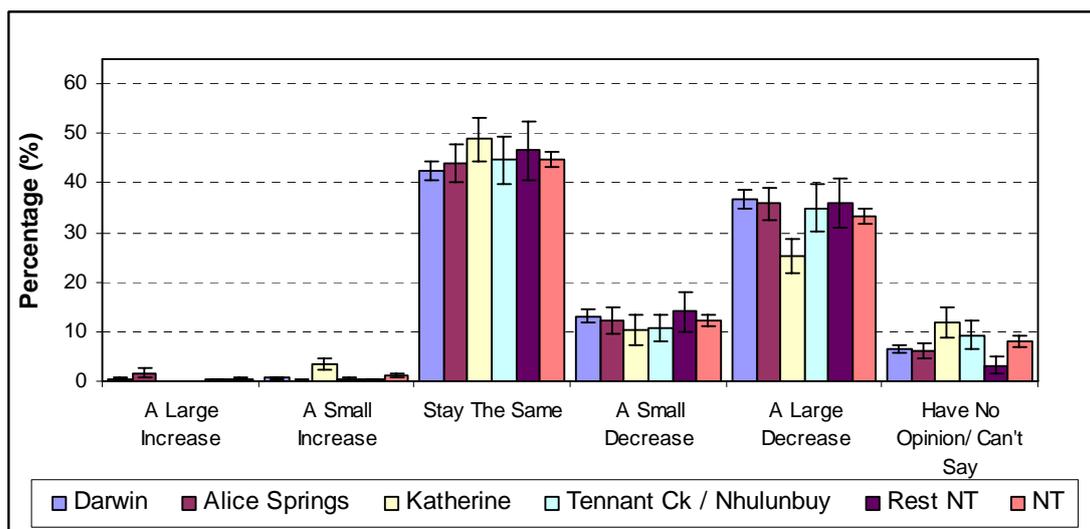
As poker machines in the NT are spread among hotels, clubs and casinos, it is important to get a sense of which venue types are of most concern to the population. To do this, those respondents who held an opinion regarding the increase or decrease in the number of poker machines were asked in which type of venue (i.e. hotels, clubs or casinos) such an increase or decrease should occur. It is important to keep in mind the very large difference in the actual numbers of those who wanted an increase (N=2,424) or a decrease (N=62,759) when comparing percentages.

Of the 1.8% of the population who supported an increase in the number of poker machines in the community, there was a strong preference (over 80%) for the increase to be in clubs, with approximately half wanting an increase in hotels and casinos. In contrast, the 45% of the population who strongly supported a decrease did so

primarily for clubs and hotels (just under 90%) (Table 6.1). Fewer than half wanted a decrease to occur in casinos.

This finding highlights the importance of gambling venues. Majority opinion supported a reduction in the number of machines in clubs and hotels, the community venues which have hosted the expansion in poker machine numbers over the past decade. Casinos, on the other hand, are viewed as specific gambling venues which are seen as more valid hosts of machines than those in community venues.

Table 6.1: Opinion of those who supported an increase or decrease in the number of poker machines in the local community by where these increases/decreases should occur

Venue where increase/decrease should occur	Poker machines in local community	
	Increase (N=2,424)	Decrease (N=62,759)
	Lower – upper bound (%)	Lower – upper bound (%)
Clubs	76.5 - 91.4	86.5 - 90.2
Hotels	34.5 - 58.7	85.1 - 88.3
Casinos	38.9 - 62.8	42.7 - 47.1

6.3 Perception of the Benefits and Drawbacks of Poker Machines

Community opinion concerning the specific benefits and drawbacks *for the NT* of having poker machines at clubs, hotels and casinos was measured using two open-ended questions (i.e. questions that do not present a choice of preselected responses) with the results coded into various categories. An open-ended format was chosen in order to uncover the benefits and drawbacks from the individual perspective of the respondent using their own words. This format avoids the pitfall of researchers predefining response options, which may not assess the full range of benefits or drawbacks of gambling. The responses were categorised and the most frequent nine categories, which accounted for the majority of responses, are presented in the section.

6.3.1 Benefits of poker machines

The results from the question about the perceived benefits for the NT of poker machines are presented in Figure 6.6. Anti-poker machine sentiment was captured by this question, even though its intent was to measure benefits. Specifically, over 30% of the population thought that there was no benefit to be derived from poker machines. Over one fifth of regular gamblers and over one quarter of non-regular gamblers thought there were no community benefits of poker machines. This proportion was higher for non-gamblers, over 40% who stated there were no benefits associated with poker machines. This mirrors the findings of the attitude survey conducted by McMillen and Togni in 1998 which found that more than one-third of respondents believed then that there would be no community benefits flowing from the introduction of poker machines (McMillen & Togni 2000, p.308).

The perceived benefits were largely associated with the revenue generated by machines. Between 15% and 20% of the population thought that the economic

benefits deriving from poker machines were mainly directed towards the industry in the form of increased revenue for venues, while a similar proportion thought machines provided increased taxation revenue for government. Just over 10% thought that money actually returns to local communities.

Around 15% of gamblers suggested that poker machines provide entertainment and recreational benefits. This is an interesting point because the pleasure people derive out of gambling is the primary social benefit of gambling (Productivity Commission 1999); the entertainment value of poker machines may have been expected to be higher. It certainly weakens the argument that poker machines proliferate because of their entertainment value. It also raises the question why gambling participation is high when the perceived social benefits are modest. Some of the other social benefits identified were increased employment and tourism activity, as well as benefits for charity.

Figure 6.6: Percentage of gambler type and their perceptions of the benefits of poker machines for the community
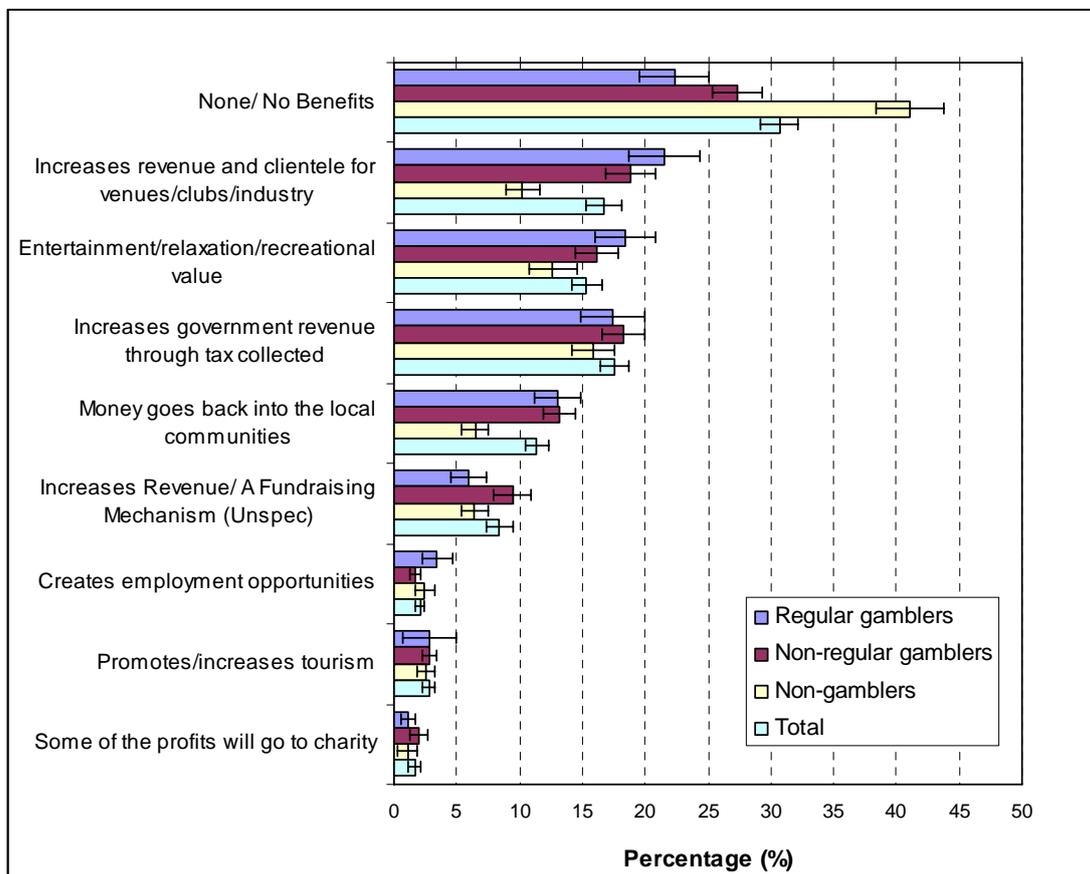
Note: This data is based on the NT Gambling Prevalence 2005 question 'What do you see as the benefits for the Northern Territory of having poker machines at clubs, hotels and casinos?'

6.3.2 Drawbacks of poker machines

The population was far more aware of the perceived drawbacks of poker machines compared with the benefits (refer to Figure 6.7). A substantial proportion (over 40%) of the population felt that people were encouraged to spend more than they could afford on poker machines. In other words, venues were regarded as high risk environments which were potentially financially damaging to people. Almost one-third of the population was concerned about the issue of people becoming addicted to playing poker machines. There was also some level of concern for people on low or fixed incomes who gambled, and also about how families were affected by gambling. Concerns about the drawbacks of poker machines were generally expressed in similar proportions by gamblers and non-gamblers, perhaps with the difference that regular gamblers were slightly less likely to see the social drawbacks of poker machines.

Figure 6.7: Percentage of gambler type and their perceptions of the drawbacks of poker machines for the community
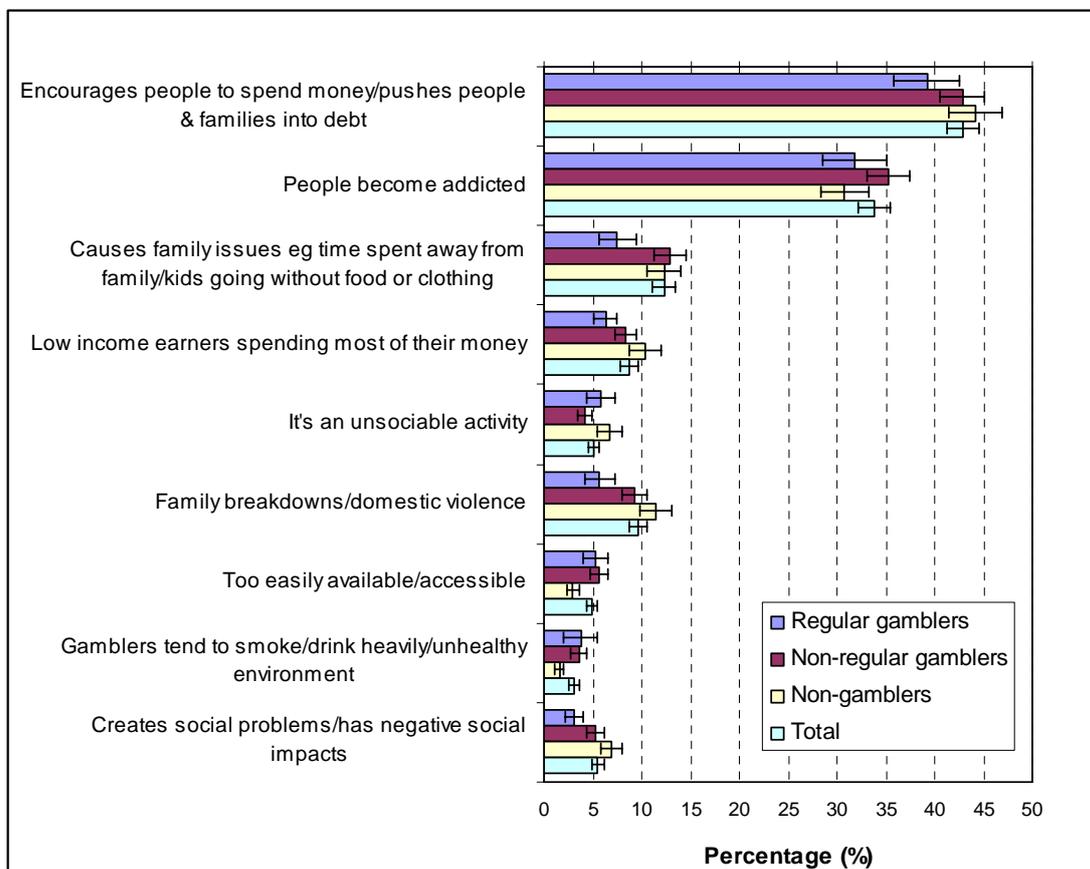
Note: This data is based on the NT Gambling Prevalence 2005 question 'What do you see as the benefits for the Northern Territory of having poker machines at clubs, hotels and casinos?'

6.4 Summary

Community attitudes towards gambling were assessed by asking the extent to which people agreed with the statement that gambling did 'more good than harm for their local community', a question chosen to enable comparison with the Productivity Commission's national survey. Although a significant majority disagreed with the statement that gambling does more good than harm, a high proportion of the

community participated in gambling activities. Community opinion was equally divided about whether the number of poker machines in the community should stay the same or be decreased. The vast majority of those who supported a decrease favoured the decrease occurring in clubs and hotels whereas slightly less than half favoured a decrease in casinos. The perceived drawbacks of poker machines for the community appeared to outweigh the benefits. The perceived drawbacks were social in nature; the perceived benefits were primarily economic and flowed to the industry and government rather than the consumer. Community attitudes towards gambling appeared to be influenced by the level of individual participation in gambling, with gamblers more likely to perceive gambling as having positive implications for the community. However, only a very small minority of gamblers thought that there should be an increase in poker machines.

7. Key Findings and Recommendations for Further Research

This final chapter presents a summary of some of the report's key findings followed by an outline of proposals for areas of research that may usefully build on the current findings. Please note that an integrated discussion of the results of all three component of the gambling project (i.e. the prevalence survey, the Indigenous gambling scoping study, and the socio-economic impact assessment by ACIL Tasman) is currently being completed as part of the final submission to the CBF. This discussion sits outside each of the three components of the project and brings the various findings together to provide a comprehensive overview of the NT gambling scene.

7.1 Gambling Participation

A telephone survey of a sample of 1,873 NT residents was conducted in August–September 2005 to study participation in and attitudes towards gambling. The survey closely followed the approach of a previous major national survey conducted by the Productivity Commission in 1999 and achieved a broadly comparable response rate of 37%. Table 7.1 presents participation rates in different gambling activities from the survey. It shows that 73% of adult residents of the NT participated in at least one gambling activity in the 12-month period preceding the survey (if raffles are included this figure rises to 85%). Almost two-thirds of the population (63.8%) reported participation in more than one gambling activity. Playing lotto or another lottery game had the highest participation rate (52.8% of the adult population). The next most frequent gambling activities were buying instant scratch tickets (28.6%), playing poker machines (27.0%), playing keno (22.6%) and betting on horse or greyhound races (19.0%). A small proportion of NT adults played bingo (1.9%) and even fewer individuals (0.6%) played internet casino games.

These participation rates are generally lower than the Australian average measured in the same way by the Productivity Commission in 1999. In fact, NT residents only participated in one activity – keno – more than all Australians in 1999. Given the popularity of keno may have increased in the years since the Productivity Commission completed its survey, it is not certain that NT residents are currently more enthusiastic keno players than their national counterparts.

Table 7.1: Participation and frequency of gambling by adult for Australia 1999[1] and the NT 2005[2]

	Total participation (%)	
Gambling activity	**Australia 1999**	**NT 2005**
Played lotto or other lottery game	60	53
Bought instant scratch tickets	46	29
Played poker or gaming machines	39	27
Bet on horse or greyhound races	24	19
Played keno at club / hotel / casino / other	16	23
Played table games at a casino	10	10
Bet on a sporting event	6	5
Played bingo at a club or hall	5	2
Played games privately for money	5	4
Played an Internet casino game	0.4	0.6
Any gambling activity	82	73

Source: 1999 PC National Gambling Survey and 2005 NT Gambling Prevalence Survey

Surprisingly, given they had the greatest available range of gambling opportunities including the Territory's two casinos, the major centres of Darwin and Alice Springs (77.4% and 70.7% respectively) did not display the highest participation levels. The highest participation was in Tennant Creek/Nhulunbuy (80.1%). The lowest participation was in the Rest of the NT (65.1%), no doubt reflecting reduced access to gambling opportunities outside urban centres.

The NT population is composed of between 7.0% and 8.0% regular gamblers (i.e. individuals who gambled at least once a week on activities other than lottery games or instant scratch tickets), between 64.0% and 67.0% non-regular gamblers (i.e. individuals who gambled in any single gambling activity, apart from lottery games or instant scratch tickets, less than weekly), and between 25.6% and 28.3% non-gamblers.

Regular gamblers were over-represented within:

- households with an income of less than $20,000 p.a.
- the over 55 years age group
- group households
- retirees
- males
- those educated to secondary level
- households with an income over $100,000 p.a.

Regular gamblers *were under-represented* within:

- females
- those with some university education
- couples with children.

Non-regular gamblers were *over-represented* within:

- people who are unemployed or looking for work
- households that earned less than $20,000 p.a. and households that earned between $80,000 and $100,000 p.a.
- one-parent families with children.

Non-regular gamblers were *under-represented* within:

- self-supporting retirees.

Non-gamblers were *over-represented* within:

- group households
- those with some university education
- people born overseas.

Non-gamblers were *under-represented* within:

- households that earned below $40,000 and above $80,000 p.a.
- one parent families with children
- couples with no children
- those with primary and secondary education.

The variables that most discriminated between the gambler type were: gender (men twice as likely to be regular gamblers), income (higher income earners are more likely to be regular gamblers), and education (better educated people generally less likely to gamble compared to the NT average). Family structure was also a significant variable. Couples with children were under-represented in the regular gambler category, as were the 35 to 44 years age group, while one parent families were over-represented in the non-regular gambler category. Retirees were over-represented among regular gamblers, and part-time workers were under-represented. People on home duties and those unemployed were approaching under-representation. Unemployed people were also under-represented amongst the non-gamblers, but over-represented in the non-regular gamblers. Group households were over-represented in the regular and non-gambler categories, indicative of the varied social composition within them. These variables relating to family structure suggest that various time and financial constraints, as well as stage in the lifecycle, do influence gambling behaviour.

7.2 Prevalence of Problem Gambling

The prevalence of problem gambling in the NT, as defined by the SOGS 5+ threshold, is 1.06% with an upper and lower bound for the standard error between 0.9% and 1.3% (Table 3.1, pg.21). Therefore, the 95% confidence interval for the prevalence is 0.73% to 1.43%. This means that, as measured by the SOGS, the NT has an estimated 1,465 problem gamblers with a approximate lower bound of 1,000 and upper bound of 2,000. The prevalence of gamblers with severe problems, as defined by the SOGS10+ threshold, was 0.23%. This translates to approximately 320 adult residents with severe gambling problems. When calculated as a percentage of the population of 10,160 regular gamblers, the prevalence of problem gambling (SOGS 5+) is 14.27%. The companion rate for severe problem gamblers (SOGS 10+) is 3.0%.

The CPGI 8+ provided a lower estimate of problem gambling at 0.64% of the NT population with an upper and lower bound for the standard error between 0.52% and 0.76% (Table 3.1). Therefore, the 95% confidence interval for the prevalence is 0.40% to 0.88%. This translates to an estimated 885 problem gamblers with an approximate lower bound of 550 and higher bound of 1,200.

The use of the two screens by this report has enabled direct comparison between the NT and all other Australian, and most international, jurisdictions. These estimates, when compared to previous estimates by national and interstate studies, rank the NT on a par with Queensland, with proportionately fewer problem gamblers than NSW, Victoria, and the ACT, but more than Tasmania and WA. Other jurisdictions have undertaken prevalence surveys; the results of which are yet to be released (i.e. Tasmania and South Australia). These will provide a better indication of where the NT stands in the national context of problem gambling prevalence.

Within the NT, Alice Springs had the highest prevalence of problem gambling (between 0.95–2.21%), followed by Darwin (between 0.85–1.25%), Katherine (between 0.18–1.11%), Tennant Creek/Nhulunbuy (between 0.08–0.64%), and the Rest of the NT (between 0.62–1.56%). Problem gambling is more prevalent in the larger urban centres. However, the only statistically significant difference was between Darwin and the Rest of the NT. This does suggest an association between problem gambling and urbanity, an association that may be explained by the increased availability of gambling opportunities in urban centres including access to casinos combined with the more pubs and clubs with poker machines and keno.

Surprisingly, the areas that had the lowest prevalence of problem gambling, Tennant Creek/Nhulunbuy and the Rest of the NT, also had the highest proportion of regular gamblers (around 5% more than the NT as a whole). Regular gamblers were twice as likely compared with non-regular gamblers to gamble on poker machines, keno, and the races. This suggests that participation *per se* does not necessarily lead to increased gambling problems. One possible explanation may be that there is less to do in the smaller, remote areas, so more people gamble recreationally, and these individuals are not at risk from developing gambling-related problems because their motivations for gambling may be different. The issue may also be to some extent one of access, in which the gambling opportunities of preference to problem gamblers, namely poker machines, are less prevalent in remote centres, or are located in venues which may not be particularly attractive to many individuals for one reason or another.

In terms of their representation within particular socio-demographic groups in the NT population:

Problem gamblers (SOGS 5+) were *over-represented* within:
- households with an income of less than $20,000 p.a.
- the Indigenous population
- those educated to primary school level.

Problem gamblers (SOGS 5+) were *under-represented* within:
- those educated to tertiary level
- people working part time.

More detailed multivariate analysis identified four statistically significant risk factors for problem gambling (SOGS5+). These included high annual household income of $100,000 p.a. or more; low levels of formal education (no higher than secondary school); identification as an Indigenous person; and a main household language other than English. Identification as an Indigenous person a significant risk factor despite the fact that only about one third of Indigenous NT residents have access to a home phone and were thus in scope for this survey.

The risk factors that attain statistical significance in the multivariate analysis for problem gamblers defined on the basis of the SOGS5+ (high income, Indigenous status, primary to secondary education, and non-English speaking background) are closely match those that are not significant for regular gambling, where male gender and age (50 years and over) are the only (but strongly) significant risk factors. This suggests that problem gamblers may be fundamentally different from most regular gamblers. In other words, a problem gambler is not simply an extreme version of a regular gambler. They are fundamentally different in terms of their economic and social circumstances, gambling patterns and, most likely, in terms of their motivations for gambling.

A slightly different picture of the problem gambler is painted if the analysis is based on the CPGI instead of the SOGS. The social characteristics of the problem gambler defined on the basis of the CPGI are listed below:

Problem gamblers (CPGI 8+) were *over-represented* within:

- households with an income of less than $20,000 p.a.
- group households.

Problem gamblers (CPGI 8+) were *under-represented* within:

- households with an income more than $60,000 p.a.
- 25–34 year olds
- couples with no children
- those educated to tertiary level.

Household income and to a lesser extent education remain as significant defining variables (compared with the SOGS profile). Both profiles found that problem gamblers were over-represented in low income groups (household income below $20,000 p.a.), and both found an association between low formal educational achievement and problem gambling (or conversely high educational achievement and reduced problem gambling). These variables, although general, appear to be fundamental influences on problem gambling.

Importantly, non-English speaking background and Indigenous identity no longer appear as significant characteristics of the problem gambler. The fact that one screen suggests Indigenous people are at greater risk of being problem gamblers while the another does not has direct and serious consequences for policy and potential intervention. The obvious question to ask is: which screen, if either, is most valid? Before this question can be convincingly answered in the NT context more comparative analysis of the screens needs to be undertaken. This work will determine if particular items in the SOGS are positively classifying Indigenous individuals more

frequently than others. In other words, it will determine if particular questions in the SOGS are unsuitable for cross-cultural assessment of problem gambling.

However, the differences between the screens suggest that the profile of the SOGS5+ problem gambler should be interpreted with some caution. This is particularly the case for the over-representation of Indigenous people and those from non-English speaking backgrounds. This divergence in no way invalidates the previous discussion of problem gambling based on the SOGS5+ definition. The SOGS was used for its comparability with the Productivity Commission's national results and to enable comparison between the NT prevalence estimates and other jurisdictional studies. Use of both gambling screens in this sense has certainly added value to the results presented in this report. More research of Indigenous residents and gambling issues along the lines outlined below needs to be conducted before any firm conclusions may be drawn about the prevalence of problem gambling within the small section of the Indigenous population surveyed as part of this research.

7.3 Gambling Expenditure

The primary point to make is that self-reported gambling data are fundamentally unreliable due both to the difficulty of the task of remembering by respondents and to the potential unwillingness to answer truthfully. For example, comparing total recorded gaming machine revenues of $114 million per year with comparable self-reported expenditure suggests self-reported expenditure under-estimates actual gambling losses on poker machines by a factor of two. Nonetheless the data produced by the survey are useful because they give an idea of the proportionate expenditure by gambler type, information that is not available from any other source. This is important because it provides an idea of the extent to which the small minorities of problem gamblers, and to a lesser extent, regular gamblers, contribute to overall gambling expenditure.

The self-reported data indicate the NT population spends a greater proportion of its gambling dollars (35%) on playing poker or gaming machines than on any other gambling activity. Betting on horse or greyhound racing accounts for one-quarter (23%) of the community's gambling expenditure. Playing table games at a casino and sports betting accounted for 10% and 12% respectively of total perceived gambling expenditure. The remaining gambling activities accounted for almost one-fifth of total expenditure.

Regular gamblers, who comprise between 7% and 8% of the adult population (and who as a group incorporate problem gamblers) account for 75.5% of total gambling expenditure. On a per capita basis this equates to an estimated average self-reported annual expenditure of $11,183. Problem gamblers (SOGS5+), who comprise an estimated 1.1% of the adult population, were responsible for an estimated 31.3% of total gambling expenditure. This equates to an estimated average annual self-reported loss of $30,913, which, given the likelihood of under-reporting, should be interpreted as a probable underestimate of the true gambling losses for this group. Problem gamblers (SOGS5+) also reported spending more per capita on all forms of gambling except for betting on a sporting event. They accounted for 68% of expenditure on playing games privately for money, 42% of total expenditure on poker machines, 37%

of total expenditure on playing casino table games, and 25% of total racing expenditure.

7.4 Poker Machines in Community Venues

Analysis of actual total player loss data for the past nine years for poker machines in all venues in the NT revealed steady and continuing increases of approximately $10 million per year. Casino based gaming machines appear to have reached a plateau in the average annual takings of about $80,000 per machine. In hotels and clubs, average machine takings are lower (about $50,000 in 2005), but still increasing. Higher average machine yields were found in the established regions of Darwin and Palmerston, rather than the more remote centres.

There is a clear pattern that shows that higher rates of return per machine are associated with higher numbers of machines per venue. Over the past decade, the average effect of adding an extra machine to either clubs or hotels has produced a proportionate increase in revenue. This 'concentration effect' occurs both in hotels and in clubs, but is more pronounced in hotels. An extra machine in a hotel will yield several times the equivalent of a club venue. Because the number of machines is crucial (more machines equal more average revenue) the policy of capping potentially plays a central counter-balancing role to the concentration effect. The policy of capping does create a situation of unmet demand, particularly in hotels. Therefore these venues would no doubt profit from an increase in the 10 machine limit. Only a handful of the larger clubs would benefit from increased caps. Given the generally more exclusive 'family friendly' atmosphere of the clubs over the hotels, lifting the cap on hotels would be more likely to produce a more regressive effect than lifting the ceiling on clubs.

In contrast to the patterns found in metropolitan jurisdictions by previous research studies, higher poker machine concentrations in the NT were found in areas of higher rather than lower socio-economic advantage. In other words, there exists a positive association between poker machines numbers and the relative economic affluence of an area. In one sense the socio-spatial distribution of machine gaming activity should diverge from that of the major metropolitan centres due to the high demographic contrast between poorly resourced, sparsely populated, remote regions, and an affluent and highly urbanized population (well over half located in Darwin and surrounds). However, poker machine gambling in the NT is unique in other ways. In the NT urban contexts, the extensive catchment areas may disrupt the tighter relationship between location and clientele found in the southern Australian markets, where proximity of gambler to particular venues is possibly more important (Marshall and Baker, 2001). In other words, poorer people may be disproportionately playing poker machines but this is not evident because the NT has smaller, more mobile populations. In addition, poker machines were introduced into an existing spatial structure of establishments. Venue location may very well depend on the existence of a previous facility such as a hotel (e.g. the very profitable Casuarina All Sports Club, formerly the Casuarina Tavern). Finally, venues in the NT are relatively small and have fewer options for spatial mobility of machines.

In other words, it should not be concluded that wealthier people are playing poker machines more or that poker machine allocation does not target lower socio-economic

groups. What is evident is that the unique socio-spatial structure of the NT does not produce the same spatial relationships between disadvantage and gambling are measured by this type of analysis. To understand what is happening a different research approach is required and some suggestions are outlined among the research recommendations at the end of this chapter.

7.5 Community Attitudes

Community attitudes towards gambling were assessed by asking the extent to which people agreed with the statement that gambling did 'more good than harm for their local community', a question chosen to enable comparison with the Productivity Commission's national survey. A significant majority (70%) disagreed with the statement that gambling does more good than harm. The responses were remarkably similar to the results of the national survey in 1999, indicating that the majority of the NT population does not agree that gambling is a positive benefit to the community, and that this perception has remained relatively steady over time. Given that 73% of the population participate in gambling, attitudes towards gambling do not appear to directly influence behaviour for most people. However, behaviour does appear to influence community attitudes. Attitudes were influenced by the level of individual participation in gambling, with more gamblers than non-gamblers likely to perceive gambling as having some benefits for the community.

Community opinion was equally divided about whether the number of poker machines in the community should stay the same or be decreased. Very few people want an increase in the number of poker machines. The majority of those who supported a decrease favoured a decrease in clubs and hotels. The perceived drawbacks of poker machines for the community appeared to outweigh the benefits. A substantial proportion (over 40%) of the population felt that people were encouraged to spend more than they could afford on poker machines. In other words, venues were regarded as high risk environments which were potentially financially damaging to people. Almost one-third of the population was concerned about the issue of people becoming addicted to playing poker machines. There was also some level of concern for people on low or fixed incomes who gambled, and also about how families were affected by gambling.

The perceived benefits were largely associated with the revenue generated by machines. Between 15% and 20% of the population thought that the economic benefits deriving from poker machines were mainly directed towards the industry in the form of increased revenue for venues, while a similar proportion thought machines provided increased taxation revenue for government. Just over 10% thought that money actually returns to local communities. Around 15% of gamblers suggested that poker machines provide entertainment and recreational benefits. This is an interesting point because if the pleasure people derive out of gambling is the primary social benefit of gambling (Productivity Commission 1999), then the entertainment value of poker machines may have been expected to be higher. It certainly weakens the argument that poker machines proliferate because of their entertainment value. It also raises the question why gambling participation is high when the perceived social benefits are modest.

7.6 Future Research Agenda

The current study is, at its core, a baseline study of gambling and problem gambling in the NT. As such it represents a platform from which a host of other research projects may be developed over the next several years. The specific content of these projects depends in part on the priorities of the CBF and stakeholders. However, there are several key areas may be suggested for future research that are described in the subsections below. As far as possible they are linked directly to the results of the prevalence survey.

The first point to make is that the research study presented here uses a telephone survey methodology. As such, it is subject to all the potential biases and uncertainties associated with this methodology, particularly the fact that it could not reach the entire NT population. All research findings should therefore be interpreted cautiously and, wherever possible should be confirmed or replicated, particularly if decisions with major consequences are to be based on them. This is dramatically highlighted by the different problem gambler profiles generated on the basis of the SOGS5+ compared with the CPGI 8+. The latter did not find an over-representation of problem gamblers in the urban Indigenous population. The reliability of some of the research findings from this survey may be enhanced by means of comparisons with research done elsewhere, including prevalence studies from other jurisdictions. The use of both screens has effectively benchmarked the NT for this purpose. Other findings, particularly those relating specifically to local Territory issues or circumstances, will be strengthened if they are confirmed as a result of research which explores the issues using different methodology. Thus a general observation regarding future priority research is to undertake additional studies which explore the key new findings and conclusions drawn from this study but by using different methodologies. Recommendations for specific research projects are provided below.

A second point to make is that the data from the telephone survey is as yet not comprehensively analysed. Further comparison of the gambling screens is a priority here. In addition, further exploration of the overall survey dataset is required in respect to complex interactions which might exist. A considerable program of analytical work is still to be fully defined and undertaken to fully extract the information contained within the survey results. This work should be factored into a comprehensive follow-up research program as an early priority. Further use could also be made of the poker-machine and other gambling activity player loss data. Detailed examination of the relationship between the data collected from the two gambling screening tools is also necessary.

A third point to make regarding future research areas is that this and the accompanying two studies (i.e. the scoping study of Indigenous gambling and the economic impact study) have left many important areas incomplete or totally unstudied. Most notable amongst these are: (a) gambling among Indigenous people (both remote and urban); (b) impacts of Territory-based gambling on non-residents; (c) research on consequences of excessive gambling; and (d) research into interventions to reduce problem gambling and its impacts, including evaluations of intervention programs. As a result, there are several other priority areas identified below worthy of further research that would usefully form the components of a longer term research agenda. These are described in the subsections below.

7.6.1 Time-series (longitudinal) research

No single study will provide a comprehensive analysis of the variety of contemporary gambling behaviours and their implications. Continued research into the patterns of gambling to compile data that will track changes in gambling prevalence over time is recommended. Time-series research is particularly relevant to the NT which has Australia's highest rate of population turnover. Approximately one quarter of the Territory's resident population in 2001 had lived somewhere else 5 years earlier, compared to less than 10% for most other states (ABS 2001). This is more significant given that the non-permanent residents surveyed reported significantly higher per capita gambling expenditure than permanent NT residents. It is therefore important to track changes over time, changes that are inevitable, as these will be reflected in different participation patterns and hence potentially require different policies. For example, only 0.6% of the NT population (almost entirely younger males) play internet casino games, and it would be useful from a policy perspective to track changes in this activity over time, particularly given the dramatic rise in internet gambling overseas. A repeat survey every two to three years would track these changes. It would be useful in a technical sense because it could provide a fresh approach to measuring gambling expenditure, use only the CPGI now it is benchmarked, reduce the number of superfluous questions, add other areas of interest including motivation questions, and indeed, anything else of specific interest to the CBF or Gambling Reference Group. A repeat survey would be more efficient and cost effective than the previous one.

However, it is necessary to move beyond prevalence surveys, and to broaden the scope of the research program to include longitudinal studies aimed at tracing gambling attitudes, behaviours and consequences in various sub-groups over time. Given that the NT Gambling Prevalence Survey 2005 was restricted to the adult population, of particular value would be longitudinal work with young people (aged below 18 years) to see how gambling behaviour and attitudes develop over time. Young people do have different gambling patterns. In an indicative sense the prevalence survey found that younger age groups (18–24 years) tend to have higher participation levels across a range of gambling activities. It may be that younger people are more mobile and more technologically literate so have greater opportunity to engage with a range of gambling types. Younger people are important not just for this reason, but because they represent future cohorts of gamblers and problem gamblers.

Knowledge of precursors of problem gambling is important for the creation of effective prevention programs. Research which explores these factors is therefore important. Longitudinal forward-looking time-series studies are very powerful tools if they can be large enough to identify precursors of problem gambling. They can, however, be prohibitively expensive because of the large samples required. A possible alternative approach is to work in reverse. That is, start with problem gamblers and undertake research which explores their history to identify the most significant events and factors on the route to becoming problem gamblers. A particularly powerful technique might be borrowed from the discipline of epidemiology, namely case-control studies. In this method known cases (problem gamblers) are compared possibly by matching (age and sex) with a group of known controls (non-problem gambler, probably regular gamblers). The histories, behaviours and underlying

characteristics of the cases and controls are recorded through interviews or other means and analyses are undertaken to determine significant patterns of difference between the two groups. While the technique does not have the full power of prospective studies it can be orders of magnitude cheaper and often is the difference between possible or impossible research.

7.6.2 Indigenous people and gambling

The sample frame of the telephone survey by definition excluded those sections of the population that were not contactable by telephone (e.g. many Indigenous people, people in shared/group households, younger people using only mobiles, and people living in non-private dwellings like boarding houses, retirement homes, and military barracks). The under-enumeration of Indigenous people, in particular, is an important issue in the population prevalence survey because it limits what can be said about the prevalence of gambling and problem gambling in the Indigenous population, who comprise a sizeable minority (30% of the NT population). The Indigenous respondents who were contacted as part of this telephone survey were among the more well-off and urbanised sections of the Territory's Indigenous population. They therefore represent an atypical minority and consequently the prevalence survey has been limited in what it can say more generally about Indigenous people and gambling (see Appendix B). Information is desperately needed on the gambling practices and associated social implications for the wider Indigenous population. The scoping study completed as part of the CDU gambling program has outlined the broad range of issues that require attention. The core future research program needs to divert the bulk of its resources towards this end.

This redirection would require a revised research approach. Most mainstream gambling research has been of a psychological nature and concerned with 'problem and pathological' gambling (Orford 2001; Marotta, Cornelius et al. 2002). Within this framework the whole issue of Indigenous gambling has tended to be overlooked, partly because traditional, western survey methodologies have proven inappropriate for use in Indigenous communities (Dickerson 1996), and because Indigenous gambling primarily centres around the card gambling ring located outside of formal western gambling space. Mainstream gambling research instruments may simply be inappropriate for use in non-western cultural contexts because gambling has a quite different meaning in Indigenous settings (see Altman 1985; Goodale 1987; Brady 1998). This, perhaps, is part an explanation for the provision of conflicting results between the SOGS and CPGI in profiling problem gamblers. Research is therefore needed to test the gambling screens' cross-cultural validity. One joint CDU-NT Treasury PhD research project is currently under way that will attempt to do exactly that. However, this project represents a modest beginning, and much more research is required if the different conceptions of 'gambling' as distinct sets of social practices are to be understood for NT the Indigenous population.

Despite the importance of card games which operate outside the formal western gambling spaces outside mainstream venues, it is nevertheless clear to the casual observer that Indigenous people, as a group, are significant participants in formal gambling spaces. It is not clear, however, whether engagement in the two types of gambling (private and mainstream) tend to be associated, or whether one is a precursor of the other. Or, indeed, which form of gambling leads to greater negative social consequences. It is possible that both forms of gambling may have negative

consequences for Indigenous gamblers, but that they may be largely independent groups of Indigenous people who gamble in the two realms. Research is needed to answer these questions.

7.6.3 Gambling practices of particular subgroups

As pointed out above, the survey was limited to those people who had access to a home telephone and could speak and understand English. Such surveys say little about those people outside these conventional survey parameters. This does leave a gap in a multicultural and ethnically diverse population such as the NT (according to the 2001 Census almost one-quarter of the NT population was born overseas and therefore may not speak English well). In addition, while a telephone survey presents a good overall snapshot in time of the habits of a population, it is less well suited to exploring particular issues in depth. For these reasons the prevalence work may therefore be usefully supplemented by qualitative research with different subgroups (in addition to the Indigenous gambling research suggested above). These groups may include various ethnic minority groups, specific gambler types identified by the survey (i.e. the older male regular gamblers), specific 'at risk groups' (i.e. low income, low education, urban residents, and poker machine players). This type of research explicitly recognises that gambling itself is a culturally constructed phenomenon. Its meaning is created and will differ from group to group. An understanding of this diversity will begin to explain the local variations in gambling prevalence and participation. In an applied sense, such studies may identify and suggest useful interventions where behaviour is problematic for individuals or the broader community. The most obvious group to start with would be problem gamblers, who could in the first instance potentially be recruited from counselling agencies.

7.6.4 Understanding the psychology of problem gamblers

This report has shown that socio-demographic analyses of differences between problem gamblers and 'recreational' gamblers are useful, but do not go far enough in identifying the unique characteristics of problem gamblers and explaining all the risk factors for becoming a problem gambler. It is likely that problem gamblers may tend to have some fundamentally different characteristics from regular gamblers, not just in terms of general variables such as income and education, but in their motivations for engaging in particular gambling patterns. Questions remain about how and why people become problem gamblers, as well as what unique characteristics they posses that may be used to identify them reliably as a group and thus tailor particular policies and interventions to determine those currently at risk and those likely to be at risk in the future. One way forward is to test socio-psychological models that provide comprehensive frameworks for understanding human behaviour. As part of the CDU capacity building effort in gambling research three Psychology honours projects were completed in 2005. One thesis in particular demonstrated the utility of the 'Theory of Planned Behaviour' in predicting and explaining gambling behaviour. The others explored the psychosocial variables associated with gambling in the NT as well as the effects of personality traits and age in problem gambling.

These types of short-term projects may be used to:

- identify the social and psychological factors (attitudes, norms, and beliefs) that may, in combination, predict gambling behaviour;

- examine the influences on behaviour over time and the relative contributions various concepts exert and how/if this changes from adolescence to adulthood;
- explore possible reasons why some people become problem gamblers while others remain social gamblers;
- if, how and why problem gamblers stop being problem gamblers; and
- from this knowledge develop interventions and mechanisms for putting them in place, and monitoring and evaluating their effectiveness.

Socio-psychological studies specifically of problem gamblers may be a useful addition to the in-depth qualitative studies suggested above. Indeed, both qualitative and quantitative studies of particular subgroups, particularly problem gamblers, are recommended, potentially through existing NT support services. This type of research may potentially inform how negative effects of gambling may be minimised through programs of education (in schools and media), support services for problem gambling and venue-based mechanisms for interrupting destructive and addictive gaming behaviours.

7.6.5 Social impacts of gambling venues

There are several areas of research that would be fruitfully explored in relation to gambling venues. It would be useful to know why the concentration effect operates the way it does, and why it operates in some venues and venue types (i.e. clubs) more so than others. There are a range of factors that are specific to venues and venue management that may be more important than, or certainly complementary to, the sheer transformative pulling power of an increased number of machines. These may include the relative attraction and profitability of individual machines that are masked by aggregate figures, the specific placement of particular machines or types of machines to within venues to increase overall profits, and the provision of services (e.g. cheap food and beverages and other forms of inducement and promotions, particularly in clubs). To answer these questions it would be useful to track changes in venues over time. This could either be done through an ongoing project, or be a historical examination of player loss data for selected venues combined with interviews with venue managers and operators. An understanding of what is actually happening within venues, and how these processes are reflected in player loss, would ideally be required before capping policies are changed or more considered processes for social impact assessment are introduced. In particular, more research needs to be done into the ways venues vary in their clientele mix, their hours of peak activity and the levels of risk of harm which may result if the respective caps of ten and forty-five machines are relaxed.

A second area of interest is the patronage of gambling venues. The results of this report show that higher player loss occurs in areas of greater economic wealth as measured by the SEIFA index. However, this does not mean that that better-off people are playing poker machines more intensively. Other results from the prevalence survey suggest poker machine players, on average, receive lower incomes than the NT average. This discrepancy is explained by the idea of venue catchments. In the NT, many venues are unlikely to have tightly defined catchments, that is, they attract patrons from a broad spatial range. This is why the socio-spatial approach is limited in the absence of information about local community patronage. It may be that any negative socio-economic effects of machine gaming are disguised in the less socially

segregated venue clientele of NT venues. Information is therefore required about clientele, including their place of residence combined with their patterns of daily, weekly and seasonal patronage. This will allow for the gauging of social impacts more accurately by finding out which groups are frequenting particular venues and most intensively using poker machines.

In terms of venue catchments, the casinos represent powerful influences that are worthy of individual attention. The prevalence survey found that the level of participation in table-game gambling by the Rest of the NT population was comparable with that of residents of Darwin and Alice Springs, indicating that some individuals may travel long distances to, at least in part, visit the casino. Certainly many people in remote areas visit the casino as part of their trips to the main centres. The social impacts of the casinos are felt well beyond the immediate location and these may be assessed only through talking to casino patrons, either in or near the venue, or at a select number of remote communities.

The question of venue catchments, of course, is part of a broader question of high mobility, particularly of the Indigenous population. An understanding of these patterns of mobility as they relate to gambling, particularly as they relate to casino visits, would deepen our knowledge of the social impacts of gambling in the NT. However the socio-spatial analysis of venues completed as part of this report obscures the effect of the Indigenous population since 80% of Indigenous people are residents of remote communities or small towns, which have only a few, if any, licensed venues. The participation of Indigenous people is therefore poorly estimated, and is more accurately captured by studies of seasonal migrations to larger centres, combined with observational and case studies. However information is critically needed on the consequences for a culturally distinct minority of exposure to globalised gambling culture.

7.6.6 Consequences of gambling

The NT has a very different population profile to other States and Territories in many respects. In particular the presence of large extended families is almost certain for sections of the community (mainly the Indigenous community) but most probably absent for other sections (i.e. high mobile workers temporarily resident in the NT). While the financial consequences for gamblers, their families and family members may be predictable to some extent from knowledge of losses presented in this and other studies, the flow-on effects to family and extended family may be very different for different sections of the NT community and unpredictable from work done in other states or elsewhere. Research to explore the possibly very specific consequences of gambling in the different sections of the Territory community should be amongst the research priorities. More detailed knowledge of the patterns of gambling among less advantaged groups through focus groups, observational studies and pathways to problem gambling will be necessary to assess the effects of increased gambling, including the liberalisation of poker machines in community venues.

7.6.7 Community awareness and intervention

Although community attitudes to gambling were sought in the survey and presented in this report, it is unclear whether the NT community (either in total or broken down into the various gambler types) is fully aware of the extent of gambling expenditure or the full social and economic benefits and consequences of the gambling industry and,

therefore, whether this information is fully reflected in the attitudes reported. It is also unclear whether community views (and gambling behaviour) would significantly change if facts about the gambling industry were more fully known. Furthermore, it is not fully clear how best to inform the community of these facts, most significantly, how best to reach problem gamblers and potential problem gamblers, and if such efforts would make a meaningful difference by reducing gambling behaviour that is damaging.

As indicated elsewhere the Territory's population is different to other jurisdictions. A systematic study to explore awareness-raising strategies used elsewhere and to consider their appropriateness or adaptability to the NT's population or sub-groups of the population would have merit. It would be particularly appropriate to explore the role played by gambling venues in this respect. Are venues playing an effective, or any, role in awareness raising an intervention in the Territory? Are some better than others? What lessons can be learned from the leaders, either in the NT or elsewhere, which might be adapted more broadly in the NT?

In a longer-term strategic sense, the prevalence survey found that education level was one of the main socio-demographic variables which correlated with gambler type. Specifically, people with higher levels of formal education were less likely to be regular or problem gamblers than those with lower levels of education. Education strategies may therefore, *prima facie*, be potentially valuable mechanisms for intervention. In a longer-term educational sense, the fact that problem gamblers are over-represented within people with no more than a primary school education strongly suggests that gambling awareness needs to occur in primary school settings if it is to be of maximum preventative value.

At a more specific level, research into the social support systems in place in gambling environments (and government and non-government agencies) and their commitment to and effectiveness at detecting, monitoring and dissuading problem gambling and its consequences is needed. A valuable project to progress NT relevant knowledge in this regard would be to identify and evaluate intervention strategies that are adopted both in other parts of Australia and overseas. This proposed project may examine which interventions may be appropriate (both culturally and demographically) to adaptation to the NT context, and initiate a pilot scheme that may be evaluated over time. This suggestion is underpinned by the recognition that the current report is about the prevalence of gambling and problem gambling in the NT, both of which it has effectively charted. The challenge now remains to build on this platform to convert these results into meaningful policy responses to the issues raised.

Appendix A: Methodology of the Prevalence Survey

Sample size

In order to accurately estimate the prevalence of what is a relatively small yet otherwise heterogenous subgroup of problem gamblers, at most only several percentage points of the general adult population, the population sample needed to be relatively large. Even in the more populous Australian States, it is difficult to generate large enough sample sizes for meaningful analysis. For example, the sample size used by the Productivity Commission Survey in April 1999 was 10,500 (of which 600 were NT residents). The target sample for the current survey was set at 2,000 completed interviews from an adult population of 138,225. Assuming that approximately equal proportions of regular gamblers, non-regular gamblers, and non-gamblers were sampled, this sample size would enable statistically reliable comparisons between groups, as well as an accurate estimate of the level of problem gambling. The only feasible cost-effective way to achieve the target sample size was by a telephone survey. Telephone surveys have the advantage of being able to reach large numbers of respondents relatively cheaply and efficiently. This is particularly important where the population is geographically dispersed, as is the case in the NT, where a significant proportion live in remote locations. Telephone surveys are also useful for administering complex, logically sequenced questionnaires like the one required for this study.

In order to obtain a sample of problem gamblers large enough for reliable estimates and analysis it was necessary to bias the sample towards those individuals who gamble regularly. To achieve this a two-stage population survey was conducted, an approach that has been effectively adopted in Australia (Productivity Commission 1999) and overseas (Volberg 2002), and is standard practice for prevalence surveys. The technique involved selecting certain individuals for a full interview based on their gambling participation. Participants were categorised based on their responses to an initial screening questionnaire that assessed the type and frequency of their gambling behaviour. Three categories of gambler were used:

- regular gambler – defined as someone who gambled at least once a week, or the equivalent thereof, on activities other than lotteries or instant scratch tickets;
- non-regular gambler – someone who gambled in any single gambling activity less than weekly; and
- non-gamblers – those who did not gamble at all in the 12 months preceding the survey.

Following the proportionate split achieved by the Productivity Commission, which achieved adequately similar numbers in the three groups, all regular gamblers were interviewed, one in four non-regular gamblers were interviewed, and one in two non-gamblers were interviewed. In order to achieve the current sample of 2,000 completed interviews, an estimated total of 6,000 screener interviews was set as the target. This estimate was based on the return of the 1999 Productivity Commission Survey which obtained 3,498 full interviews from 10,609 screener interviews, a ratio of three to one.

The sample also needed to be adequately representative of the NT population (Table 1). It was therefore stratified by gender, age, and geographic area (Table 2). The age categories used were: 18–24 years; 25–34 years; 35–49 years; and 50 years or older. Given the geographic concentration of the NT's population in urban centres, a decision was made to use these centres as the geographic units rather than regional areas. In the NT, socio-demographic definition of regions essentially just reflect the characteristic of the urban centres they contain. Using a broad regional geography would simple disguise the urban localities and introduce the risk of an ecological fallacy, where the characteristics of the aggregate are falsely attributed to individual units within it. Therefore, five areas (Darwin, Alice Springs, Katherine, Tennant Creek and Nhulunbuy) were selected which, when combined, accounted for 72% of the adult population. The two smaller centres Nhulunbuy (adult pop. 4,085) and Tennant Creek (adult pop. 2,132) were combined to obtain a large enough sample size for analysis. All other residents were placed in a generic 'Rest of the NT' category. The target sample size in each of the resultant forty age/gender/location categories was distributed according to the latest NT population estimates.

Table 1: Estimated resident population 2005

	M18-24	M25-34	M35-49	M50+	F18-24	F25-34	F35-49	F50+	TOTAL
Alice Springs	1,001	1,771	2,991	2,161	1,061	2,071	3,000	2,015	16,071
Darwin	4,907	8,155	12,211	10,821	4,862	8,808	11,814	8,828	70,407
Katherine	375	735	1,138	1,159	391	858	1,055	941	6,652
Tennant Creek/ Nhulunbuy	431	734	1,212	869	412	763	1,097	699	6,217
Rest of NT	3,457	4,907	6,383	5,997	3,266	4,494	5,372	5,003	38,878
Total	**10,171**	**16,302**	**23,936**	**21,006**	**9,991**	**16,994**	**22,339**	**17,486**	**138,225**

Source: Roy Morgan Research 2005

Table 2: Stratification of the estimated target sample

	M18-24	M25-34	M35-49	M50+	F18-24	F25-34	F35-49	F50+	TOTAL
Alice Springs	43	77	130	94	46	90	130	87	698
Darwin	213	354	530	470	211	382	513	383	3,056
Rest of NT	150	213	277	260	142	195	233	217	1,688
Katherine	48[1]		49	50	54[1]		46	41	289
Tennant Creek/ Nhulunbuy	51[1]		53	38	51[1]		48	30	270
									6,000

Note:[1] The age groups 18–24 and 25–34 were combined for Katherine and Nhulunbuy/Tenant Creek due to the difficulty in recruiting younger people in these smaller population centres.

Questionnaire design and respondent selection

The questionnaire consisted of four sections. Both problem gambling screens were included in a section of the questionnaire on problem gambling. To reduce order effects the screens were presented in reverse order to one half of the sample. The remaining sections incorporated community attitudes to gambling, gambling behaviour, and socio-demographic characteristics. Each of the sections was based primarily on questions selectively drawn from the Commission's instrument. Some

new questions were added where appropriate to specifically meet the needs of the current project. The new questions are listed in the Table 3. A copy of the full questionnaire is included in Appendix F.

The sample was selected randomly from the electronic White Pages. The last birthday method was used for respondent selection, with loose quotas for age and sex and strict quotas for area. In order to introduce the survey and determine whether the person answering the telephone was old enough to participate, information was provided about the survey and the potential respondent was asked their age. If they were not within the scope of the survey (i.e. 18 years or older), they were thanked for their time and the interview was terminated. Eligible respondents were asked whether they had participated in any of the activities from a list of gambling activities in the previous 12 months in the NT. Respondents who had only bought raffle tickets or not participated in any of the gambling activities were categorised as non-gamblers and were subsequently only asked the community attitude and demographic questions. The remaining respondents were asked about their frequency of participation in gambling activities to classify them as regular or non-regular gamblers. All gamblers were asked the questions about community attitudes to gambling and then asked about their gambling behaviour (duration and expenditure). Only regular gamblers were asked the questions from SOGS and CPGI in order to identify the subset of problem gamblers. All respondents were asked the demographic questions.

Towards the end of field work, the quotas were activated for cells that had still not reached their minimum, and the birthday method was no longer used for respondent selection. Instead, the interviewers asked for the person in a specific age group, depending on which age quota cell had not reached its minimum. Other respondent selection protocols were as follows:

1. Call backs: 3 call backs were made where there was no initial contact with the respondent, and 5 call backs where initial contact had been made. This is different from the Productivity Commission where 4 call backs were made where there was no initial contact with the respondent, and 5 call backs where there was initial contact.
2. Answering machines: A message was left on answering machines after identifying the person the interviewer wished to speak to. This was not done for the Productivity Commission.
3. It is mentioned in Appendix F8 of the National Gambling Survey report that the phone was allowed to ring at least 10 times before hanging up. This was automated on Roy Morgan's CATI system, and the cut off point was set at 20 seconds.
4. The sample was placed on the CATI system in small lots, to ensure that when field work finished, the proportion of numbers dialled that did not have their full number of callbacks completed was minimal.

Table 3: Questions designed specifically for NT gambling prevalence survey

Questionnaire section	Questions asked
Section A. Community attitudes to gambling	QB4. What do you see as the benefits for the Northern Territory of having poker machines at clubs, hotels and casinos? (open-ended response) QB5. What do you see as the drawbacks for the Northern Territory of having poker machines at clubs, hotels and casinos? (open-ended response)
Section B. Gambling behaviour (duration and expenditure)	C6. Do you usually set yourself a limit when you gamble on poker machines? (responses yes, no). C7. Do you stick to the limit you set yourself? (responses: never, rarely, sometimes, often or always [also asked in reverse order]). Note: these questions were asked for each gambling activity
Section C. Problem gambling screens	Canadian Problem Gambling Index (responses: never, sometimes, most of the time, almost always, don't know) CPG1. Have you bet more than you could really afford to lose? Would you say never, sometimes, most of the time, or almost always? CPG 2. Still thinking about the last 12 months, have you needed to gamble with larger amounts of money to get the same feeling of excitement? CPG 3. When you gambled, did you go back another day to try to win back the money you lost? CPG 4. Have you borrowed money or sold anything to get money to gamble? CPG 5. Have you felt that you might have a problem with gambling? CPG 6. Has gambling caused you any health problems, including stress or anxiety? CPG 7. Have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true? CPG 8. Has your gambling caused any financial problems for you or your household? CPG 9. Have you felt guilty about the way you gamble or what happens when you gamble?
Section D. Demographic profiles	QD1. Do you consider your current principal place of residence to be the Northern Territory? (responses: yes, no). QD1A. How long have you lived in the NT? (responses: less than 6 months; 6 months to less than 1 year; 1 year to less than 2 years; 2 years to less than 3 years; 3 years to less than 5 years; 5 years to less than 10 years; 10 years or more).

Response rates

A market research firm (Roy Morgan Research) was contracted to collect data under the direction of the Chief Investigator. Surveys were conducted during August and September 2005. This period is in the 'dry season' when the population is highest (fewer residents are on holiday and more tourists are visiting). It also was chosen to avoid school and public holidays that occur earlier in the dry. A pilot of thirty interviews was conducted over two evenings, 19 and 20 August 2005. Minor

modifications were subsequently made to the questionnaire. The main survey was run between 24 August and 21 September 2005. Average interview length was as follows:

- Regular gambler – 24 minutes
- Non-regular gambler – 18 minutes
- Non-gambler – 11 minutes
- Overall average – 16 minutes.

For purposes of comparison with the Productivity Commission survey, response rates were calculated using two methods – the upper bound method and the conservative method. Both of these define response rates as the number of respondents who did participate as a proportion of those eligible to participate. The methods differ in terms of how the number of eligible participants are calculated. The conservative method does not subtract cases where there were no replies, answering machines and engaged numbers from the total of eligible numbers. As a result the total of eligible numbers is higher than for the upper bound method (which does not include cases where there were no replies no replies, answering machines, and engaged signals as eligible numbers) resulting in a lower figure for the conservative response rate. Information describing the categories of responses is contained in Table 4. The conservative response rate was 32% compared with the upper-bound response rate of 37%.

Table 4: Response Rates

Item	No.	No.
Total numbers dialed		**22 075**
Ineligible — disconnected number, business, or fax	5 411	
Ineligible — no-one fits introductory/quota criteria	226	
Total eligible numbers (conservative method)		**16 438**
No replies (max. not reached)	148	
No replies (4+ callbacks)	1 815	
Answering machine	297	
Engaged	11	
Total eligible contacts(upper bound method)		**14 167**
Appointments (not conducted)	145	
Refusals (before survey commenced)	5 981	
Respondent doesn't speak English	320	
Terminations	2 457	
Total non responses	8 903	
Completes screener alone	3 391	
Completes screener and full interview	1 873	
Total completed screeners		**5 264**
Contact rate		**88%**
Response rate (conservative method)		**32%**
Response rate (upper bound method)		**37%**

Note that these response rates (32% and 37%) are lower that achieved by the Productivity Commission Survey in 1999 (47% and 55%) despite the fact that the same technique was used apart from the minor alterations in respondent selection listed above which, in balance, was unlikely to have any discernable effect on responses. In fact the same individual field manager was employed to coordinate the administration of the survey. The decrease in response rate was therefore unrelated to methods – it reflected an actual lowering of public involvement in the survey process.

This may be due to the deregulation of the telecommunications sector and the cheaper cost of phone calls. As a result, the number of telemarketing calls has increased substantially in the 7 years since the Productivity Commission completed its survey, reducing the receptiveness of the public to unsolicited phone calls. Roy Morgan reports a general reduction response rate of 2–3% per annum. This would account for the reported 15–18% difference from the Productivity Commission survey. It is reflected in a proportionately higher number of terminations.

Response rates are important as they introduce the notion of non-response bias. The concern here is the possibility that non-respondents have different characteristics to respondents. One way to check to see if this has occurred is to compare the achieved sample with the known characteristics of the population as a whole. This information is presented in Appendix C as part of the sample description. However, it would be more useful to know if the reporting of gambling behaviour was different between those that participated in the survey and those that did not. One could presume, for example, that heavy gamblers may be out gambling in the evening rather than being home answering the telephone. It may also be reasonable to suggest that people with gambling problems may be reticent to engage in a survey of this nature. Unfortunately, no gambling participation figures are readily available for the NT. Some information is available from the Productivity Commission's national survey. The Productivity Commission prevalence results did match ABS Population Survey Monitor 1995–96 weekly prevalence estimate of 50%, suggesting non-response bias was not an influential factor in the national survey. As the current project re-employed these methods it is unlikely that a significantly different non-response bias occurred. However, this is an assumption that should be noted when results are interpreted.

Actual sample size and stratification

In total 5,264 screener interviews were conducted of which 1,873 respondents completed the full interview (Table 5). The sample of full interviews was distributed as follows: Darwin (n=1,024); Alice Springs (n=297); Katherine (n=167); Tennant Creek/ Nhulunbuy (n=148); and Rest of the NT (n=237).

Table 5: Geographic distribution of the achieved sample

	ERP[a] 2005 (18+)		Screener Sample		Full Interview	
	N	**(%)**	**N**	**(%)**	**N**	**(%)**
Darwin	70,407	50.9	2,931	55.7	1,024	54.7
Alice Springs	16,071	11.6	823	15.6	297	15.9
Katherine	6,653	4.8	461	8.8	167	8.9
Tennant Creek/Nhulunbuy	6,217	4.5	374	7.1	148	7.9
Rest of NT	38,878	28.1	675	12.8	237	12.7
Total	**138,226**	**99.9[b]**	**5,264**	**100.0**	**1,873**	**100.1[b]**

Notes: [a] ERP is the Estimated Resident Population; [b] Total does not equal 100 due to rounding of the column subtotals. *Source:* Roy Morgan Research 2005

Note the discrepancy between the estimated target (Table 2) and the achieved sample (Table 5). Specifically, the urban centres were sampled at a proportion above their estimated sample, while the sample for the Rest of the NT was significantly lower

than the estimate (12.8% of the screeners compared with a target of 28.1%). There was a lower than expected response rate in the non-urban area, necessitating more calls per completed interview than anticipated. All listed numbers in the White Pages were called using the protocols outlined above. The interviewers simply ran out of telephone numbers to call. Therefore, the sample achieved is the absolute maximum possible using the current methods. Some of the extra interviews required were allocated to the other geographical areas which resulted in all the urban areas exceeding their quotas. Even doing this, the total number of screeners was lower than the target (5,264 instead of 6,000) and the number of completed interviews was consequently marginally under target (1,873 instead of 2,000). However, this was a highly successful outcome. All urban centres had been adequately represented, as had the non-urban centres, because every possible telephone number in the sample frame had been called.

Appendix B: Under-representation of the Indigenous Population

Limits of the telephone survey

The sample frame of the telephone survey by definition excluded those sections of the population that were not contactable by telephone (e.g. many Indigenous people, people in shared/group households, younger people using only mobiles, and people living in non-private dwellings like boarding houses, retirement homes, and military barracks). The under-enumeration of Indigenous people, in particular, is a crucial issue in the population prevalence survey.

ABS Census data show that of the 50,785 Indigenous persons in the NT in 2001, 57.7% were aged 18 years or older. Considering that the telephone survey was conducted four years later, more than half the Indigenous people in the NT would have been within the scope of the survey, that is, around 15% of the NT population. Indigenous people were significantly under-represented in the survey sample with 126 respondents (6.7% of the survey sample) identifying themselves as Indigenous to the telephone interviewers (Table 1). This corresponds closely with the results achieved by the NT telephone survey conducted by McMillen and Togni (2000) in 1996 who achieved an Indigenous sub-sample of 7.5% of the total sample.

Table 1: Aboriginal or Torres Strait Islander origin for males and females in survey sample

Indigenous origin	Males		Females		All	
	n	%	n	%	n	%
Yes	49	5.4%	77	8.0%	**126**	**6.7%**
No	852	94.1%	889	91.8%	**1,741**	**93.0%**
Refused	4	0.4%	2	0.2%	**6**	**0.3%**
Total	**905**	**100.0%**	**968**	**100.0%**	**1,873**	**100.0%**

Source: NT Gambling Prevalence Survey 2005

Given this under-representation, the prevalence survey is limited in what it can say about the Indigenous population. What it can say is limited specifically to those Indigenous people who had a working telephone in their home at the time of the survey. To offer any interpretation of this group it is necessary first consider the characteristics of this sub-sample and to identify where they differ from those Indigenous people who did not have a working telephone in their home.

According to the *National Aboriginal and Torres Strait Islander Social Survey 2002* (ABS 2002), only 37% of the Indigenous population of 32,575 persons lived in a household with a working telephone. The phone survey could not possibly reach more than this proportion of the Indigenous population. Access to a working telephone at home was further divided between those people living in urban centres and those in remote areas. In 2002, of the 5,567 Indigenous residents of Darwin, 4,153 (75%) had access to a working home phone while 1,414 (25%) did not. Of the 26,997 Indigenous people resident elsewhere in the NT, only 7,775 (29%) had a phone compared with 19,209 (71%) who did not. This clearly indicates the Indigenous respondents who were included in the sample frame were likely to be an urban subset of a much larger

population. Therefore, the sample of Indigenous people obtained is highly skewed, and regardless of the number of people interviewed, can under no circumstances whatsoever be considered in any way representative of the Indigenous population of the NT. The Indigenous sample is simply a subset of the urban residents who have working telephones in their homes.

However, this does not necessarily mean that the subset of Indigenous people interviewed needs to be omitted from the content or analysis contained in the prevalence report. If more identifying information can be obtained about this subset, then it may be validly used as a defined, non-representative, component of the Indigenous population. In other words, the Indigenous respondents may be included in the analysis if they can be specifically defined as a discrete group. This would require some information about any significant differences between Indigenous people with phones (and hence potentially included in the survey) with those without phones (and hence excluded from the survey).

Characteristics of householders with working telephones

To this end, a range of cross tabulations were produced by the ABS based on the *National Aboriginal and Torres Strait Islander Social Survey 2002* (ABS 2002). The intention was to describe the unique characteristics of households with working telephones at home, thereby describing the nature of the sub-sample of the Indigenous population. These characteristics are presented in the series of Tables below. Householders with working telephones were compared with non-phone holders on the basis of gender, age, tenure type, labour force status, income quintiles, cash flow problems, ability to raise $2,000 within a week, strategies to meet basic living expenses in the last 12 months, types of strategies used to meet basic living expenses in last 12 months, whether they had days without money for living expenses in the last 12 months, whether they had been arrested by police in the last 5 years, whether they had ever been formally charged by police, participation in sport and cultural events, whether had moved recently, and perceived level of difficulty with transport.

Of all these variables, it was the economic ones which provided the most useful discrimination:

- 93% of those in the highest income quintile had a working home telephone (Table 6).
- 90% of home owners, including those purchasing through a rent / buy scheme, had working telephones (Table 4).
- 84% of those without cash flow problems had a working telephone (Table 7).
- 70% of those who could raise $2,000 within a week had a working telephone (Table 8).

The Indigenous people contacted as part of the telephone survey were most likely to be relatively financially well off urban-dwellers, located at the top of the Indigenous economic structure. All references to Indigenous respondents in this document refer solely to this subgroup, what comprise an 'urban Indigenous middle-class'. No other inferences can be drawn about the rest of the Indigenous population who comprise the majority, and who were outside the parameters of the telephone survey. As result, a separate study is under way to explore the impacts of gambling on the Indigenous population. The results of this work will be reported in a separate document in mid 2006.

Table 2: Gender

Has a working telephone at home						
	Yes – working phone		No working phone			Total
	n	%	n	%	n	%
Males	5433	35	10,153	65	15,593 [(a)]	100
Females	6496	38	10,470	62	16,971 [(b)]	100

Notes: (a) Includes 6 not stated; (b) Includes 5 not stated.

Table 3: Age

Has a working telephone at home						
	Yes – working phone		No working phone			Total
	n	%	n		n	%
18-29	4,239	34	8,336	66	12,575	100
30+	7,690	38	12,287	61	19,989[(a)]	100

Note: (a) Includes 11 not stated.

Table 4: Tenure type

Has a working telephone at home						
	Yes – working phone		No working phone			Total
	n	%	n		n	%
Owner (including rent/buy scheme)	2,297	90	248	10	2,545	100
Non-owner	9,632	32	20,375	68	30,019[(a)]	100

Note: (a) Includes 11 not stated.

Table 5: Labour force status

Has a working telephone at home						
	Yes – working phone		No working phone			Total
	n	%	n		n	%
Total unemployed	1,073	50	1,061	50	2,134	100
Persons not in labour force	4,004	27	10,736	73	14,739	100
Employed	6,853	44	8,826	56	15,690 [(a)]	100

Note: (a) Includes 11 not stated.

Table 6: Income quintiles

Has a working telephone at home						
	Yes – working phone		No working phone			Total
	n	%	n		n	%
Lowest income quintile	3,866	34	7,542	66	11,408	100
Highest income quintile	797	93	60	7	857	100

Table 7: Cash flow problems(a)

Has a working telephone at home	Yes – working phone		No working phone		Total	
	n	%	n		n	%
Had cash flow problems	1,366	61	872	39	2,238	100
Did not have cash flow problems	2,787	84	541	16	3,329	100

Note: (a) The item 'Whether had cash flow problems' was only collected in non-remote areas.

Table 8: Ability to raise $2,000 within a week

Has a working telephone at home	Yes – working phone		No working phone		Total	
	n	%	n		n	%
Could raise $2,000 within a week	4,684	70	1,975	30	6,659	100
Could not raise $2,000 within a week	6,785	27	18,232	73	25,028[a]	100
Unknown / Not stated	460	53	416	47	876	100

Note: (a) Includes 11 not stated.

Table 9: Strategies to meet basic living expenses in last 12 months

Has a working telephone at home	Yes – working phone		No working phone		Total	
	n	%	n		n	%
Used strategies	4,591	31	10,018	69	14,610	100
Did not use strategies	7,102	42	9,868	58	16,981	100
Don't know	190	28	493	72	683	100
Not stated	46	16	244	84	290	100

Table 10: Types of strategies used to meet basic living expenses in last 12 months

Has a working telephone at home	Yes – working phone		No working phone		Total	
	n	%	n		n	%
Short term loans / sold something / did not have meals	1,193	22	4,137	78	5,330	100
Sought assistance welfare / community organizations / friends / family	3,880	32	8,396	68	12,276	100
Ran tab at local shop or gave someone access to keycard	1,384	31	3,111	69	4,495	100
Other	69	10	586	90	654	100

Table 11: Whether had days without money for living expenses in the last 12 months

Has a working telephone at home						
	Yes – working phone		No working phone		Total	
	n	%	n		n	%
Had days without money	3,549	33	7,335	67	10,884	100
No days without money	8,381	39	13,288	61	21,680	100

Table 12: Arrested by police in last 5 years

Has a working telephone at home						
	Yes – working phone		No working phone		Total	
	n	%	n		n	%
Persons arrested	1,095	25	3293	75	4,395 [a]	100
Persons not arrested	10,834	38	17,330	62	28,169 [b]	100

Notes: (a) Includes 6 not stated; (b) Includes 5 not stated.

Table 13: Whether ever formally charged by police

Has a working telephone at home						
	Yes – working phone		No working phone		Total	
	n	%	n		n	%
Formally charged	2,611	33	5,190	66	7,808 [a]	100
Never charged	9,318	38	15,433	62	24,756 [b]	100

Notes: (a) Includes 6 not stated; (b) Includes 5 not stated.

Table 14: Participation in sport and cultural events

Has a working telephone at home						
	Yes – working phone		No working phone		Total	
	n	%	n		n	%
Participated in sports and cultural events	5,232	38	8,496	62	13,727	100
Participated in sports but not cultural events	497	43	650	57	1,147	100
Participated in cultural events but not sport	4,477	31	10,031	69	14,520 [a]	100
No participation	1,704	57	1,288	43	2,992	100

Note: (a) Includes 11 not stated.

Table 15: Whether has recently moved

Has a working telephone at home						
	Yes – working phone		No working phone		Total	
	n	%	n		n	%
Moved	2,305	40	3,463	60	5,768	100
Did not move	9,625	36	17,160	64	26,796 [a]	100

Note: (a) Includes 11 not stated.

Table 16: Perceived level of difficulty with transport

Has a working telephone at home						
	Yes – working phone		No working phone		Total	
	n	%	n		n	%
Can easily get to the places needed	8,953	41	13,069	59	22,028 [a]	100
Has problems getting to places needed	2,976	28	7,754	72	10,536 [b]	100

Notes: (a) Includes 6 not stated; (b) Includes 5 not stated.

Characteristics of the Indigenous survey sample

The characteristics of the actual sample of Indigenous people, without the weights applied, are contained in Table 17. Table 18 shows Indigenous gamblers in relation to Indigenous problem gamblers.

- Indigenous SOGS problem gamblers n=10
- Indigenous people who gamble but do not have a problem n=116
- All Indigenous gamblers n=126.

The reason we are unable to reliably extrapolate from this sample has to do with the small sample size. Given the under-representation of indigenous people in the survey sample, the result in Table 19 that 10.6% of the population is Indigenous is a statistical artifice occurring as a result of the weighting process. With such small numbers identifying as Indigenous (6.7% of the survey sample) such distortion is unavoidable. Therefore, any extrapolation should be treated with caution. For this reason the preference here is to concentrate on the unweighted sample.

Table 17: Socio-demographic characteristics of the Indigenous sample

Characteristic	Indigenous respondents	
	n =126	%
Sex		
Male	49	38.9
Female	77	61.1
Age		
18-24	23	18.3
25-34	30	23.8
35-44	36	28.6
45-54	23	18.3
55+	14	11.1
Main language		
English	107	84.9
Other	19	15.1
Marital status		
Married or living with a partner	67	53.2
Separated or divorced	16	12.7
Widowed	3	2.4
Single	40	31.7
Refused		
Household type		
Single person	12	9.5
One parent family with children	20	15.9
Couple with children	46	36.5
Couple with no children	18	14.3
Group household	21	16.7
Other	9	7.1
Education level		
Up to 4th Year	12	28.6
Completed secondary	10	23.8
Tertiary diploma	4	9.5
University	15	35.7
Can't say	1	2.4
Household income		
<$20,000	30	23.8
$20,000-$39,999	34	27.0
$40,000-$59,999	19	15.1
$60,000-$79,999	12	9.5
$80,000-$99,999	6	4.8
$100,000+	2	1.6
Don't know	23	18.3
Labour force status		
Working full-time	73	57.9
Working part-time	18	14.3
Home duties	9	7.1
Student	7	5.6
Retired (self-supporting)	6	4.8
Pensioner	5	4.0
Unemployed or looking for work	5	4.0
Other	3	2.4
Main household income source		
Wages/salary	92	73.0
Own business	5	4.0
Other private income	6	4.8
Unemployment benefit	4	3.2
Retirement benefit	4	3.2
Sickness benefit	7	5.6
Supporting parent benefit	3	2.4
Aged pension	1	0.8
Invalid pension	3	2.4
Other	1	0.8

	No Problem		Problem		All	
	n=116	%	n=10	%	n=126	%
Sex	45	38.8	4	40.0	49	38.9
Male	71	61.2	6	60.0	77	61.1
Female						
Age	23	19.8	-	-	23	18.3
18-24	28	24.1	2	20.0	30	23.8
25-34	30	25.9	6	60.0	36	28.6
35-44	22	19.0	1	10.0	23	18.3
45-54	13	11.2	1	10.0	14	11.1
55+						
Main language	102	87.9	5	50.0	107	84.9
English	14	12.1	5	50.0	19	15.1
Other	45	38.8	4	40.0	49	38.9
Marital status	71	61.2	6	60.0	77	61.1
Married or living with a partner						
Separated or divorced	23	19.8	-	-	23	18.3
Widowed	28	24.1	2	20.0	30	23.8
Single	30	25.9	6	60.0	36	28.6
Refused	22	19.0	1	10.0	23	18.3
Household type						
Single person	12	10.3	-	-	12	9.5
One parent family with children	17	14.7	3	30.0	20	15.9
Couple with children	43	37.1	3	30.0	46	36.5
Couple with no children	16	13.8	2	20.0	18	14.3
Group household	19	16.4	2	20.0	21	16.7
Other	9	7.8	-	-	9	7.1
Education level						
Up to 4th Year	12	30.0	-	-	12	28.6
Completed secondary	10	25.0	-	-	10	23.8
Tertiary diploma	4	10.0	-	-	4	9.5
University	13	32.5	2	100.0	15	35.7
Other	1	2.5	-	-	1	2.4
Household income						
<$20,000	27	23.28	3	30.0	30	23.8
$20,000-$39,999	30	25.86	4	40.0	34	27.0
$40,000-$59,999	17	14.66	2	20.0	19	15.1
$60,000-$79,999	12	10.34	0	0.0	12	9.5
$80,000-$99,999	6	5.17	0	0.0	6	4.8
$100,000+	2	1.72	0	0.0	2	1.6
Don't know	22	18.97	1	10.0	23	18.3
Labour force status						
Working full-time	67	57.8	6	60.0	73	57.9
Working part-time	17	14.7	1	10.0	18	14.3
Home duties	8	6.9	1	10.0	9	7.1
Student	6	5.2	1	10.0	7	5.6
Retired (self-supporting)	5	4.3	1	10.0	6	4.8
Pensioner	5	4.3	-	-	5	4.0
Unemployed or looking for work	5	4.3	-	-	5	4.0
Other	3	2.6	-	-	3	2.4
Main household income source						
Wages/salary	85	73.3	7	70.0	92	73.0
Own business	5	4.3	-	-	5	4.0
Other private income	5	4.3	1	10.0	6	4.8
Unemployment benefit	4	3.4	-	-	4	3.2
Retirement benefit	4	3.4	-	-	4	3.2
Sickness benefit	5	4.3	2	20.0	7	5.6
Supporting parent benefit	3	2.6	-	-	3	2.4
Aged pension	1	0.9	-	-	1	0.8
Invalid pension	3	2.6	-	-	3	2.4
Other	1	0.9	-	-	1	0.8

Table 19: Proportion of Indigenous gamblers (unweighted sample)

	Regular gambler		Non-regular gambler		Non-gambler		All	
	n	%	n	%	n	%	n	%
Indigenous	27	21.4	55	43.7	44	34.9	126	100.0

Table 20: Proportion of Indigenous gamblers (weighted sample)

	Regular gambler		Non-regular gambler		Non-gambler		All	
	n	%	n	%	n	%	n	%
Indigenous [a]	925	6.4	9,132	63.0	4,435	30.6	14,491	100.0

Note: (a) Note that the weighted data regarding Indigenous status should be treated with caution.
Source: NT Gambling Prevalence Survey 2005

Appendix C: Sample Characteristics

Appendix C describes the unweighted socio-demographic characteristics of the survey respondents.

Gender

Of the 1,873 survey respondents, 905 (48.3%) were male and 968 (51.7%) were female. This sample fulfilled quota requirements of approximately equal numbers of males and females. In the actual NT population, males significantly outnumber females. According to the Australian Bureau of Statistics (ABS, 2005), there were 111 males for every 100 females in the NT at 30 June 2004. Therefore, the survey sample contained a slight bias towards female respondents. This is not unusual for telephone surveys as women are more likely to answer the phone and engage in a survey. The last birthday method used by the survey was largely successful in significantly reducing this bias.

Age

Only adults 18 years and over were eligible for participation in the survey. Relatively few young people were represented in the survey sample with only 142 (7.6%) aged between 18 and 24 (refer to Figure 1). This is most likely because young people are less likely than older people to be at home in the evenings. High rates of mobile phone ownership among young people also limit the numbers who can be reached through fixed-line telephone surveying methods.

Almost one third (32.9%) of respondents were aged over 50 with 59.5% aged between 25 and 49. Compared to the median age of the NT population in June 2004, which was 30.6 years (ABS 2005), the sample with a median age occurring in the range 40 to 44 years exhibited a bias towards older age groups.

The distribution of age groups shows that females aged 30–34 were over-represented as were males aged 55–59. Young males aged 25–29 were the least represented group of those under 50 years.

Residency in the Northern Territory

Almost all survey respondents (98.6%) regarded the NT as their principal place of residence (refer to Figure 2). Of the NT residents, around two-thirds (65.8%) were long-term residents, having lived in the NT for 10 years or more. Relatively few (7.0%) were newcomers to the region, having lived in the NT for less than 2 years. A telephone survey will not necessarily be able to contact newcomers as people may rely on mobile phones or not connect telephones immediately. Of the 26 survey respondents who did not regard the NT as their principal place of residence, 20 came from other Australian states and three from overseas. Information regarding place of residence was unavailable for three respondents.

Figure 1: Age groups and gender of the survey sample
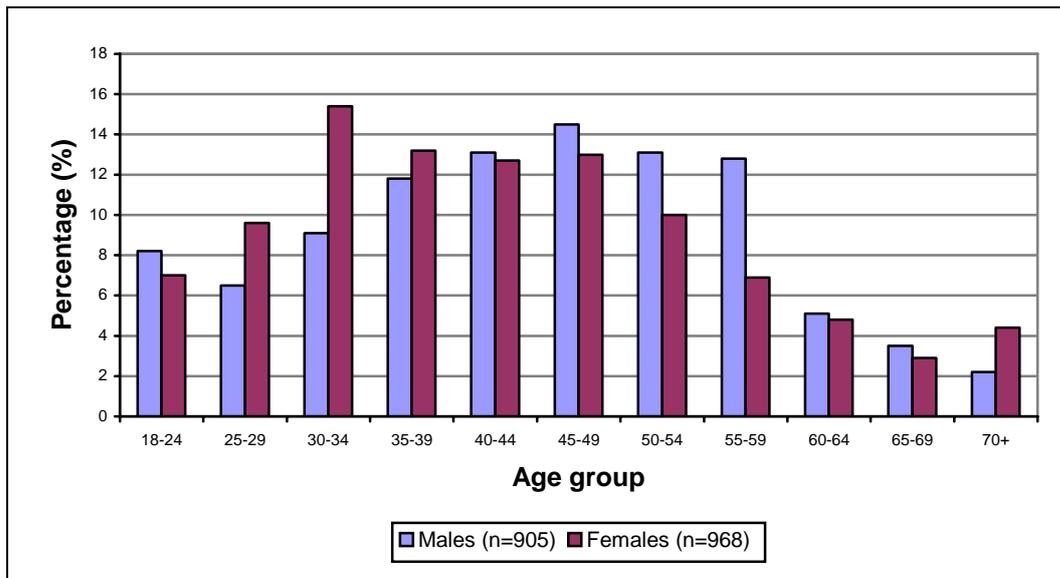
Source: NT Gambling Prevalence Survey 2005

Figure 2: Length of residency in the Northern Territory for males and females in survey sample
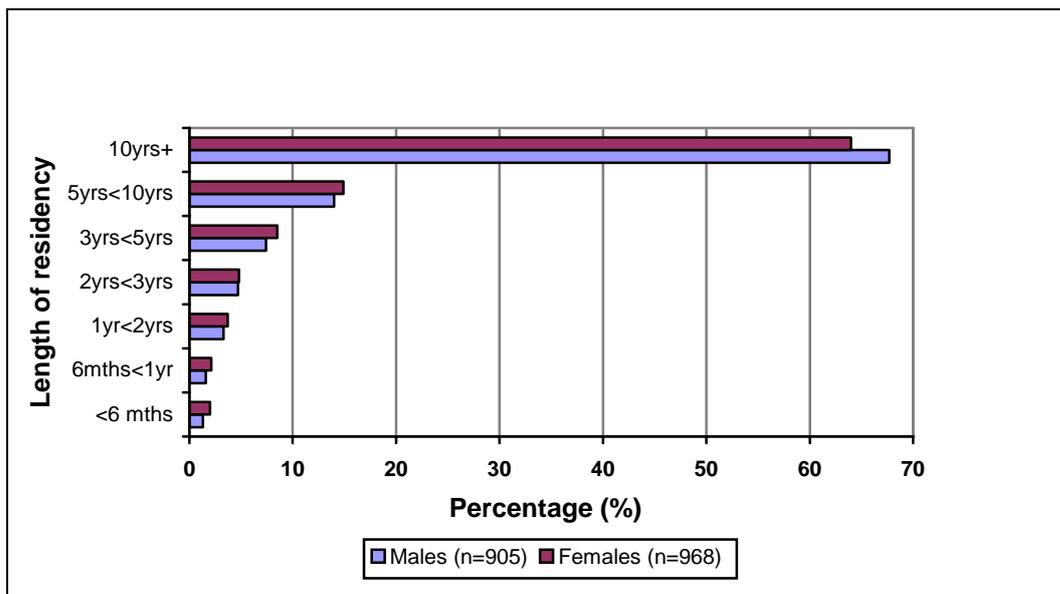
Source: NT Gambling Prevalence Survey 2005

Indigenous respondents

ABS Census data show that of the 50,785 Indigenous persons in the NT in 2001, 57.7% were aged 18 years or older. Considering that the telephone survey was conducted four years after that time, more than half the Indigenous people in the NT would have been within the scope of the survey, that is, around 15% of the NT population. Indigenous people were significantly under-represented in the survey sample with 126 respondents (6.7% of the survey sample) identifying themselves as Indigenous to the telephone interviewers. Given this under-representation, it would be unwise to extrapolate the results of this survey to the entire NT Indigenous population

without further investigation of the characteristics of the Indigenous respondents to this survey. Appendix B presents a general profile of the Indigenous sample frame, that is, those who were contactable by phone.

Table 1: Aboriginal or Torres Strait Islander origin for males and females in survey sample

Indigenous status	Males		Females		All	
	n	%	n	%	n	%
Yes	49	5.4%	77	8.0%	**126**	**6.7%**
No	852	94.1%	889	91.8%	**1741**	**93.0%**
Refused	4	0.4%	2	0.2%	**6**	**0.3%**
Total	**905**	**100.0%**	**968**	**100.0%**	**1873**	**100.0%**

Source: NT Gambling Prevalence Survey 2005

Country of birth

Most survey respondents (78.9%) were born in Australia, 7.9% were born in the United Kingdom and 3.2% in New Zealand (refer to Table 2). More than twenty-five countries were nominated as the birthplace of the remaining 10% of survey respondents. As the 2001 Census of Population and Housing showed that 77.9% of the Territory's population was born in Australia, the survey sample provided a consistent representation of the Australian-born population.

Considering the small proportions of survey respondents born in countries other than Australia and that these countries number almost 30, comparison with Census data involves comparison of proportions of less than 1.0%. As this involves a high margin of error, it is difficult to gauge whether people not born in Australia are represented in the survey sample in similar proportions to their representation in the NT population.

Table 2: Country of birth for males and females in survey sample

Country of birth	Males		Females		All	
	n	**%**	**n**	**%**	**n**	**%**
Australia	695	76.8	782	80.8	1,477	78.9
United Kingdom	80	8.8	68	7.0	148	7.9
New Zealand	35	3.9	24	2.5	59	3.2
United States of America	8	0.9	9	0.9	17	0.9
Germany	12	1.3	4	0.4	16	0.9
Philippines	5	0.6	10	1.0	15	0.8
Other	70	7.7	70	7.3	140	7.3
Don't Know	-	-	1	0.1	1	0.1
Total	**905**	**100.0**	**968**	**100.0**	**1873**	**100.0**

Source: NT Gambling Prevalence Survey 2005

Language

English was the main language spoken at home for almost all the survey respondents (96.4%) (refer to Table 3). In comparison with the entire NT population, where 2001 Census data showed that 69% of all people mainly speak English at home, the survey sample demonstrated a strong bias towards English language speakers. In telephone surveys conducted by Roy Morgan, non-English speakers are passively removed from a sample as survey material is not supplied in languages other than English nor are translators supplied unless there are more than ten respondents in a particular language group. In addition, Indigenous people are less likely to have fixed telephones and, therefore, not be contactable for a survey of this type.

Table 3: Whether English is the main language spoken at home for males and females in survey sample

| | Whether English is main language spoken at home | | | | | |
| | Males | | Females | | All | |
	n	%	n	%	n	%
Yes	871	96.2	935	96.6	1806	96.4
No	34	3.8	33	3.4	67	3.6
Total	**905**	**100.0**	**968**	**100.0**	**1873**	**100.0**

Source: NT Gambling Prevalence Survey 2005

Marital status

Almost two-thirds of respondents (62.9%) were married or living with a partner (refer to Table 4). Nearly equal proportions of males and females (11.3% and 11.1% respectively) were separated or divorced. There was a higher representation of widows (5.2% of females) than widowers (0.9% of males) in the sample. Single people accounted for over one-quarter of males (26.4%) but only 18.7% of females.

Table 4: Marital status of males and females in survey sample

| | Males | | Females | | All | |
Marital status	n	%	n	%	n	%
Married or living with partner	555	61.3	624	64.5	1179	62.9
Separated or divorced	102	11.3	107	11.1	209	11.2
Widowed	8	0.9	50	5.2	58	3.1
Single	239	26.4	181	18.7	420	22.4
Refused	1	0.1	6	0.6	7	0.4
Total	**905**	**100.0**	**968**	**100.0**	**1873**	**100.0**

Source: NT Gambling Prevalence Survey 2005

Household characteristics

- **Household type**

Patterns of household type were generally similar for male and female survey respondents (refer to Table 5). The most common household type represented in the sample was a couple with children with 35.9% of males and 39.3% of females living in this household type. One-quarter of survey respondents (25.1%) lived with a partner but did not have children in the household. Almost one-quarter (23.5%) of the males in the sample lived by themselves while there were substantially fewer (16.4%) females living alone.

Table 5: Structure of household in which males and females in survey sample resided

Household type	Males		Females		All	
	n	%	n	%	n	%
Single person	213	23.5	159	16.4	372	19.9
One parent family with children	40	4.4	94	9.7	134	7.2
Couple with children	325	35.9	380	39.3	705	37.6
Couple with no children	225	24.9	246	25.4	471	25.1
Group household	76	8.4	57	5.9	133	7.1
Other	25	2.8	28	2.9	53	2.8
Can't say	1	0.1	4	0.4	5	0.3
Total	**905**	**100.0**	**968**	**100.0**	**1873**	**100.0**

Source: NT Gambling Prevalence Survey 2005

- **Household size**

Almost half the survey respondents (48.6%) lived by themselves or with one other person (refer to Figure 3). Census data from 2001 showed that 51.5% of the NT population lived in households consisting of one or two people. Two-thirds of respondents (66.1%) lived in a household with three or fewer people. Relatively few respondents lived in very large households.

Of those respondents living with children, around one-third (34.1%) were in a household which did not contain any children under 15 years (refer to Figure 4). In households where there were children, slightly over half (53%) had only one or two children under 15 years.

Figure 3: Number of people living in the household in which individuals in survey sample resided
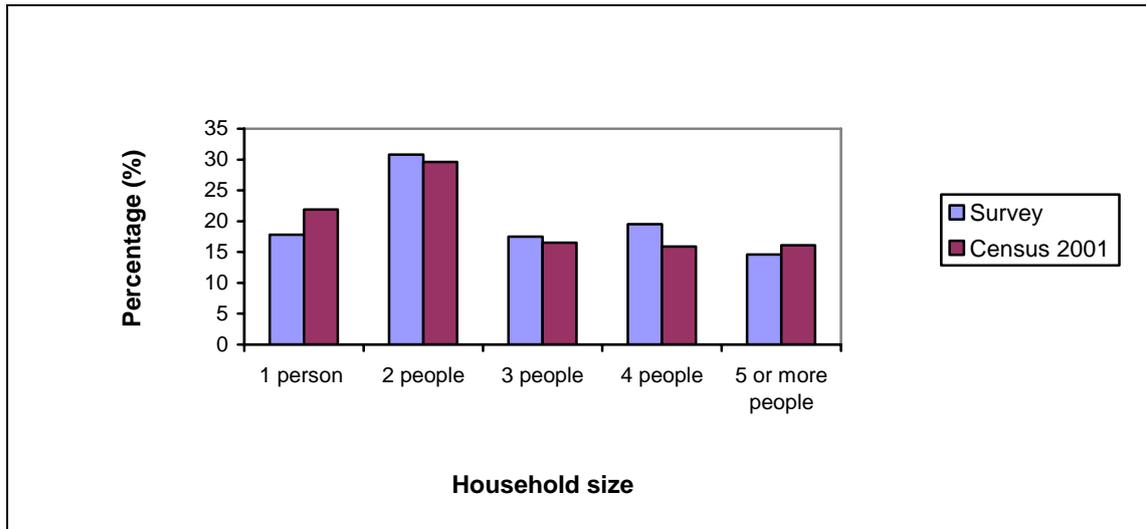
Source: NT Gambling Prevalence Survey 2005

Figure 4: Number of children under 15 years old in household
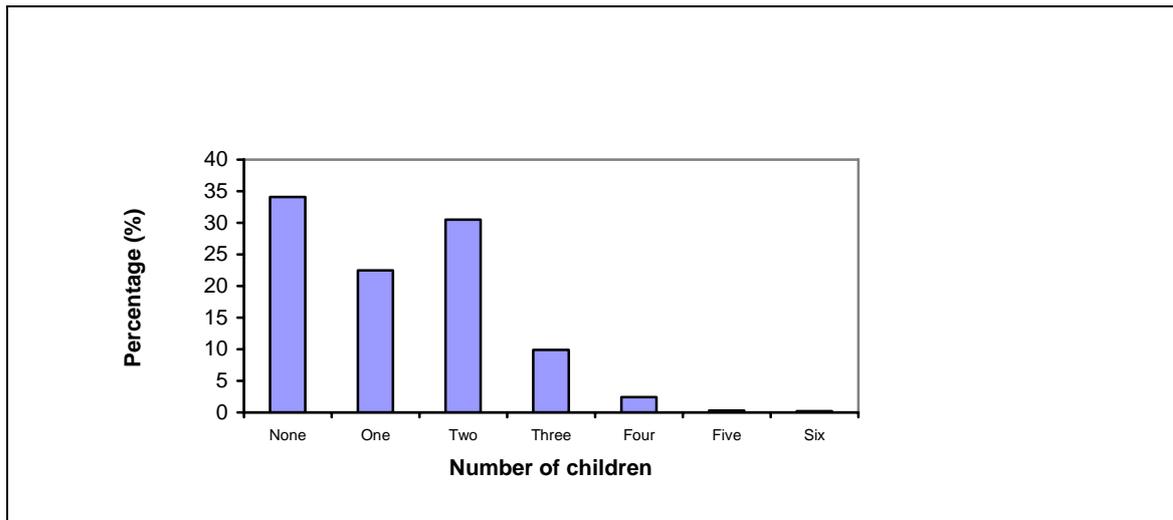
Source: NT Gambling Prevalence Survey 2005

Education

Referring to Figure 5, the category of 'Up to 4th year secondary school' includes individuals who attended some years of or completed primary school, as well as those who attended some years of secondary, technical or commercial education and those who completed Intermediate, Year 10 or 4th Form. 'Completed secondary school' includes those who completed the penultimate year of their secondary education, those who finished Technical or Commercial College, and those who finished or are currently doing Matriculation, HSC or Year 12. The category of 'Tertiary diploma' covers individuals who completed a tertiary diploma at an institution other than a university and 'University' includes those who have undertaken some university education, are now at university or have completed a university degree.

Only a very small proportion of survey respondents (1.9%) had not progressed past a level of primary education. Around one-third (34.0%) had undertaken some secondary education with 22.4 % either undertaking or having completed secondary education. One-quarter of respondents (25.5%) had obtained a university degree and, overall, 41.0% had received some education at tertiary level.

Figure 5: Highest level of education achieved by males and females in survey sample
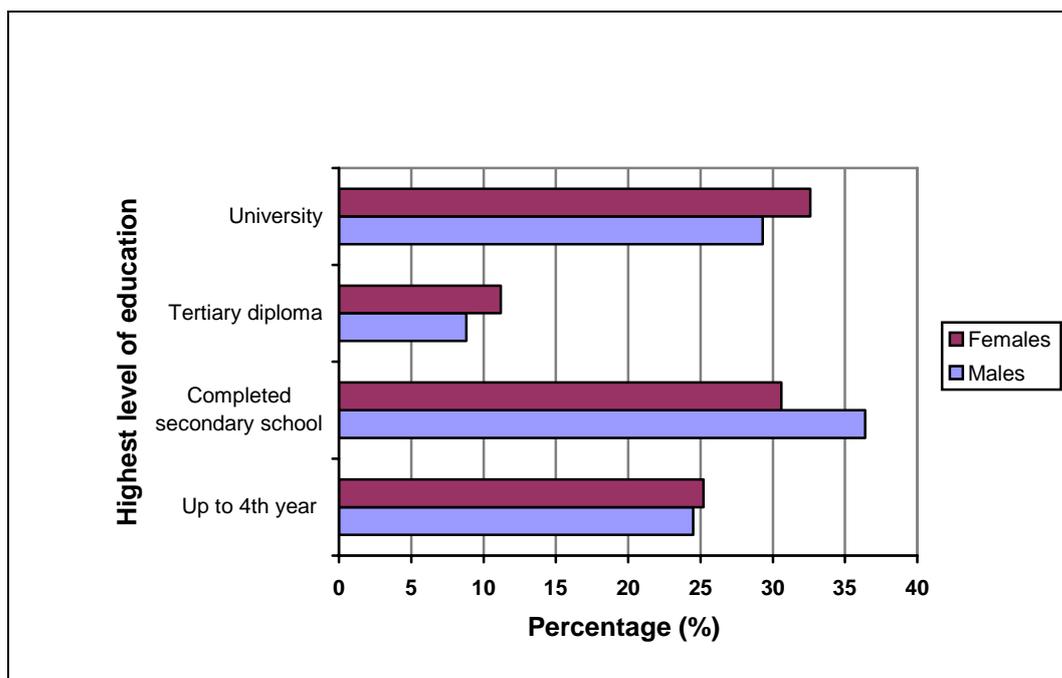
Source: NT Gambling Prevalence Survey 2005

Labour force participation

Two-thirds of the sample (66.5%) were full-time workers with a further 12.8% being employed part-time (refer to Table 7). More males than females (86.0% compared to 73.0%) were engaged in paid employment while more females than males (11.1% compared to 0.9%) gave their work status as home duties. Overall, 5.6% of the sample declared themselves to be self-supporting retirees. There were relatively low proportions of pensioners (4.3%), students (1.9%) and those who were looking for work (1.5%) in the sample.

Table 7: Labour force participation of males and females in survey sample

Labour force participation	Males		Females		All	
	n	%	n	%	n	%
Working full-time	723	79.9	522	53.9	1245	66.5
Working part-time	55	6.1	185	19.1	240	12.8
Home duties	8	0.9	107	11.1	115	6.1
Student	16	1.8	20	2.1	36	1.9
Retired (self-supporting)	52	5.7	52	5.4	104	5.6
Pensioner	26	2.9	54	5.6	80	4.3
Unemployed/looking for work	18	2.0	11	1.1	29	1.5
Other	7	0.8	16	1.7	23	1.2
Can't say	-	-	1	0.1	1	0.1
Total	**905**	**100.0**	**968**	**100.0**	**1873**	**100.0**

Source: NT Gambling Prevalence Survey 2005

Household income

Considering that almost one-quarter of respondents (22.0%) were not able to estimate their household income, the data in Figure 6 should be interpreted with caution. Very few respondents (8.2%) had an annual household income of less than $30,000. The median household income of the survey sample was in the range $80,000 to $89,999. More than one-quarter of the sample respondents (28.5%) declared an annual household income of $100,000 or more. The income of single people was treated as their source of household income.

ABS data published in *Year Book Australia 2006* show the median household income for the NT to be around $64,000. However, this figure excludes the results of households in areas of the NT defined as very remote or Indigenous communities. If included, this would significantly reduce the median household income. Therefore, the sample shows a strong bias towards NT households with a relatively high level of household income.

Figure 6: Survey respondents – distribution of household income
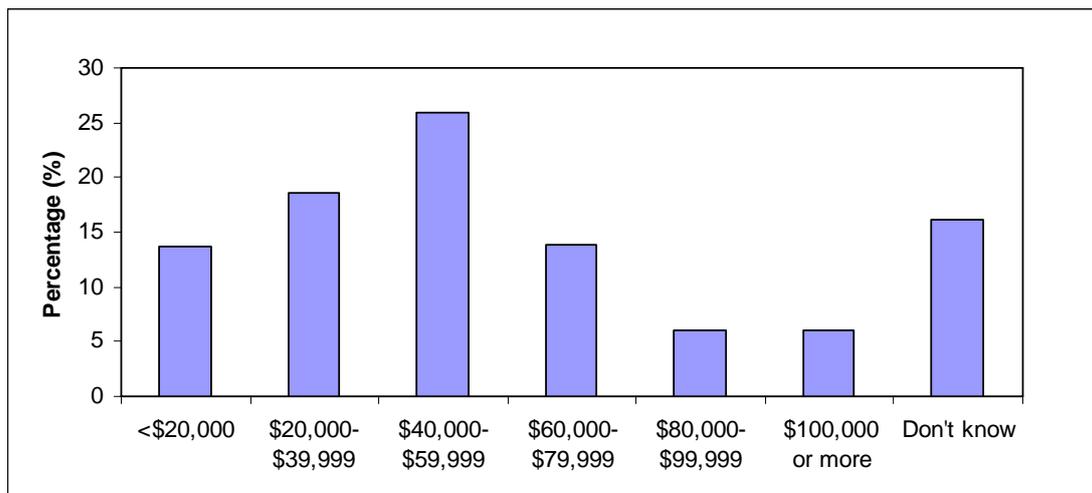
Source: NT Gambling Prevalence Survey 2005

Appendix D: 'Pokies Venues and Regions' — Data Sources, Variables and Analytical Techniques

The methodology adopted in this investigation follows very closely that reported in the Productivity Commission Report (1999), especially that of Chapter 10 (Broader Community Impacts) and the supporting technical descriptions in Appendix I (Regional Data Analysis). This also follows the procedures and conventions deployed by the Productivity Commission in their comparison of regions across States, informed by some of the curve-estimation techniques of Marshall and Baker (2002).

Data sources and variables

Gaming machine gross profit data was supplied by the NT Treasury for the financial years 1996/1997 (when EGMs were first introduced into community venues in the NT) through to 2004/2005. The data from 1996/97 to 2001/02 were aggregated by year. However, the data for the subsequent three financial years up to June 2005 were available in monthly format. The data included the name of the venue, the type of venue (club or hotel), the number of gaming machines in each venue, and the total gross profit for the establishment (be it by month or year). Put another way, gross profit refers to the actual amount players lost to EGMs. Note that these data were initially provided for community venues (pubs and clubs); the annual aggregates are published on the RGL website.

In order to conduct the socio-spatial analysis, it was necessary to geolocate each venue. Venues were identified by both their Statistical Local Area (about the size of a northern Darwin suburb) and their Statistical Sub Division names and codes. Statistical local areas (SLA) were chosen as the base spatial unit as this is the common denominator which integrates all classification structures in use in both census and non-census years (Australian Bureau of Statistics 2001). This process of geocoding involved finding out the street address of each venue from the White Pages telephone directory, and manually locating this on the statistical local area (SLA) maps published by the Australian Bureau of Statistics (Australian Bureau of Statistics 2001b). This enabled social variables from the 2001 Census to be added to the dataset, and enabled the spatial relationships between social variables and EGM expenditure to be explored. It also enabled the player loss data to be merged with the Australian Bureau of Statistics Socio-Economic Indexes for Areas (SEIFA), based on 2001 Census data.

There are four SEIFA indices provided for each local area; the most important for these purposes was the Index of Economic Resources (IER) based on twenty income, housing and family structure variables. This index has been shown to be the most robust for use in Northern Australia (Tyler and Morrison 1996). Also used as explanatory spatial properties were the values for individual variables of the Index of Relative Socio-economic Disadvantage. Of most interest to the NT in this case was the proportion of Aboriginal and Torres Strait Islander residents in each local area. Casino data were analysed in a separate data file and used for trend and volume of player loss, rather than for spatial comparisons. Population data were also obtained from ABS records, the most important being the Estimated Resident Population for each area for 2005.

The Index of Economic Resources (IER), developed from the Census as part of the Socio-Economic Indexes for Areas (SEIFA), 'reflects the profile of the economic resources of families within the areas. The census variables that are summarised by this index reflect the income and expenditure of families, such as income and rent. Additionally, variables which reflect wealth, such as dwelling size, are also included'. (Australian Bureau of Statistics 2001b, p.4). It should be noted that the average values of the IER for NT local areas is slightly higher than those for the Australian SLAs as a whole (1005, where 1000 is the national average), and that the difference between the IER scores for top and the bottom quintiles is considerably greater (252 vs 218).

Analysis technique

The data for all community venues were aggregated by Statistical Local Area having at least one venue (n=36) and Statistical Subdivision (n=8). These data were comprehensive and showed not only the total player loss (equivalent to venue profit or revenue (about 11% of the 'handle' or total amount wagered), but also for each financial year 1996–07 through 2004–05). Following the methodology used by the Productivity Commission, aggregated local area values were weighted by their (normalized) Estimated Resident Population values to take into account their differences in population size, following the procedure described in the technical section of that Report.[1] Monthly variations in player loss were also measured by the coefficient of variation (standard deviation divided by monthly mean revenue), to take into account the seasonality of activity at each venue. These values were later aggregated for areas and regions. Age and sex variables were also included as explanatory variables for each Statistical Local Area and Statistical Subdivision.

The data were analysed by a number of graphical and statistical techniques with the SPSS package. Scattergrams with variable labels were used primarily to report two-variable associations (e.g. the relationship between economic resources and the number of machines per Statistical Local Area (SLA)). Where more than one variable was used in an explanatory or predictive model, econometric techniques (Ordinary Least Squares, Weighted Least Squares) were used, so that the impact of each predictor could be estimated, independent of the others with which it might be associated (e.g. per cent of households in an area with low income, per cent of persons with no qualification). The results of these multivariate analyses are reported in Table D1, indicating whether the impact was positive or negative, and whether the relationship was statistically significant. Therefore, there are clearly three different units of analysis in this investigation:

1. Individual venues – named and coded
2. Local Areas which have poker machine venues
3. Statistical Subdivisions (all)

The level of analysis was appropriate to the nature of the problem. Initially, scattergrams of values of venues were appropriate, while for comparison of local

---

[1] Weights were calculated by the method used by the Productivity Commission (Appendix I.4 'Regional Data Analysis'), by normalising the square root of the estimated resident population values for each Statistical Local Area, in order to sum up to the number of observations.

areas and regions, aggregated data was used (as for previous studies). For comparison of clustering and capping effects, it was necessary to return to the individual venues to identify their type. These considerations were affected by the smaller number of venues and area populations resulting in the difficulty of aggregation when the venue numbers are very small in some areas (e.g. for subtypes of hotels or clubs). Because local area populations are often very small (around 3,500), it is important to realize that venue clientele may be drawn from across the whole city area, in contrast to the patterns of local patronage in the large metropolitan centres such as Melbourne or Sydney. For these reasons, unweighted values were used for individual venues. Rated values (e.g. number of machines per head of estimated resident population) were used for Local Areas and Subdivisions, and normalised weighting as used by the Productivity Commission was used for the regression analyses.

All dependent and independent variables were weighted by the normalised proportions of their estimated resident populations for 2005. Appropriately, the dependent variable and the number of machines were based on 2004–05 data, including the monthly variation coefficient. This model was then run using the Weighted Least Squares procedure in SPSS, the results of which are reported in Table 1. In addition, Figure 5.14 in Chapter 5 displays the relative strength of the standardized regression coefficients for each predictor, which indicates the effect of each variable when the values of all the other variables are held constant.

Table 1: Results of Multiple Regression[1] Predicting Average Revenue per Gaming Machine (Statistical Local Areas of NT, 2004—05)

Predictor Variable	Standardized Coefficients Beta	t	Sig.	Result
(Constant)		0.54	0.59	
% Male	**-0.27**	**-1.88**	**0.07**	**Negative[2]**
% Indigenous	0.14	0.49	0.63	Not Significant
Index of Economic Resources	0.41	1.57	0.13	Positive but not Significant
Monthly Variation 2004-05	**-0.38**	**-2.52**	**0.02**	**Negative and Significant**
% 41 yrs or older	-0.15	-0.96	0.34	Not significant
No. Machines 04-05	**0.42**	**2.28**	**0.03**	**Positive and Significant**
Proportion of Clubs / Venues	**-0.67**	**-3.38**	**0.00**	**Negative and Significant**

Notes: [1] Weighted Least Squares Regression – All variables weighted by square root of normalised weights of Estimated Resident Population (SLAs, 2005); [2] Marginally significant only.

Appendix E: SOGS and CPGI Questions

All regular gamblers defined by the survey were asked the SOGS and CPGI screening questions. Only regular gamblers were screened, based on the assumption that the problem gambler group is a subset of the regular gambler group. This approach minimized respondent load by not asking non-regular gamblers unnecessary questions. The interviewers reminded respondents that all the information they provided was anonymous and confidential and asked for their honest answers. The groups of questions were rotated so that half the sample was asked SOGS before being asked CPGI, and vice versa, to lessen order and priming effects within the questionnaire.

South Oaks Gambling Screen (SOGS)

For the twenty SOGS screening questions, the respondent was asked to say whether each statement had applied to them personally in the previous 12 months. For the first two questions, response options read aloud by the interviewer were 'never, rarely, sometimes, often or always'. For the remaining 18 questions, respondents were instructed to answer 'yes' or 'no'. Two options which were not read aloud by the interviewer but were available for coding were 'can't say' and 'refused'.

Responses to each of the first two questions scored 1 for 'sometimes', 'often' or 'always'. For questions 3 to 7 and 8b to 19, a response of 'yes' scored 1. Question 8a was ignored in the scoring scheme and question 20 scored 1 if the answer was either of the affirmative responses. Therefore, an individual's SOGS score could range from zero to 20 points, with a problem gambler being identified as an individual who had scored 5 or more points with a severe problem gambler scoring 10 or more points.

SOGS Questions

5. When you gambled, how often did you go back another day to win back money you lost?

6. Have you claimed to be winning money from gambling when in fact you lost?

7. Have you gambled more than you intended to?

8. Have people criticised your gambling or told you that you have a gambling problem, regardless of whether or not you thought it was true?

9. Have you felt guilty about the way you gamble or what happens when you gamble?

10. Have you felt that you would like to stop gambling, but didn't think you could?

11. Have you hidden betting slips, lottery tickets, gambling money or other signs of gambling from your spouse / partner, children, or other important people in your life?

12. a. Have you argued with people you live with over how you handle money?
    [If 'Yes']
    b. Have these money arguments centred on your gambling?

---

13. Have you borrowed from someone and not paid them back as a result of your gambling?

14. Have you lost time from work or study because of your gambling?

15. Have you borrowed from household money to gamble or to pay gambling debts?
16. Have you borrowed from your spouse or partner to gamble or to pay gambling debts?

17. Have you borrowed from other relatives or in-laws to gamble or to pay gambling debts?
18. Have you obtained cash advances using your credit cards to gamble or to pay gambling debts? This does not include using cards to make cash withdrawals from savings or cheque accounts.

19. Have you borrowed from banks, finance companies or credit unions to gamble or to pay gambling debts?

20. Have you borrowed from loan sharks to gamble or to pay gambling debts?

21. Have you cashed in shares, bonds or other securities to gamble or to pay gambling debts?

22. Have you sold personal or family property to gamble or to pay gambling debts?

23. Have you written a cheque knowing there was no money in your account, to gamble or to pay gambling debts?

24. Do you feel you have had a problem with your gambling? Would you say 'Yes, in the past but not now', 'Yes, I feel this way now' or 'No'?

Canadian Problem Gambling Index (CPGI)

For the CPGI screening questions, the time reference was 'in the last 12 months'. Responses read aloud by the interviewer were 'never, sometimes, most of the time, or almost always'. Two options which were not read aloud by the interviewer but were available for coding were 'can't say' and 'refused'.

Each of the nine questions was scored in this way: 1 for each response of 'sometimes'; 2 for each response of 'most of the time'; 3 for each response of 'almost always'. Therefore, an individual's CPGI score could range from zero to 27 points, with a problem gambler being identified as an individual who had scored 8 or more points.

CPGI Questions

1. How often have you bet more than you could really afford to lose?

2. How often have you needed to gamble with larger amounts of money to get the same feeling of excitement?

3. When you gambled, how often did you go back another day to try to win back the money you lost?

4. How often have you borrowed money or sold anything to get money to gamble?

5. How often have you felt that you might have a problem with gambling?

6. How often has gambling caused you any health problems, including stress or anxiety?

7. How often have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?

8. How often has your gambling caused any financial problems for you or your household?

9. How often have you felt guilty about the way you gamble or what happens when you gamble?

Appendix F – Questionnaire

This questionnaire was produced in a CATI format. Therefore, the sequencing was complex and is difficult to reproduce on paper. This version of the questionnaire provides:

- the questions;
- the range of possible responses;
- information about how the responses were recorded;
- some minor sequencing; and
- some interviewer instructions and the text to be read to respondents.

Section A contains the introductory questions which were designed to assess community attitudes towards gambling.

Section B contains question about gambling behaviour for each of the types of gambling nominated by the respondent.

Section C contains the SOGS and CPGI problem gambling screening questions and was asked of all regular gamblers. The two parts of this section were rotated.

Section D contains question asking for demographic information and was asked of all respondents.

R03435 GAMBLING PREVALENCE SURVEY Northern Territory August, 2005

Good [Morning/ Afternoon/ Evening]. My name is (SAY NAME) from Roy Morgan Research, the people who conduct the Morgan Gallup Poll. Today we are conducting a survey for a joint Charles Darwin University and government study. The study is on gambling in the Northern Territory and is for the benefit of your local community. I would like your help please. Could I speak to the person aged 18 years or over in your household who had the last birthday?

IF NECESSARY SAY: Is now a good time or would it be more convenient if I made an appointment to speak to you at another time?

All your answers are strictly confidential. To start with, I am asking only a few quick questions to see if you qualify for the survey. They take only a couple of minutes. Should you qualify, the rest of the survey could take between 5 and 15 minutes, depending on your answers.

IF DOES NOT AGREE TO PARTICATE SAY: The results of this survey are part of a very important government study that you may have read about in the newspaper or seen on TV. By participating the results will be more accurate. Please can you spare just a couple of minutes to participate in the initial part? If you can not finish it now, we can call you back at another time.

IF RESPONDENT SAYS THEY ARE NOT A GAMBLER AND CAN'T SEE THE POINT OF PARTICIPATING, SAY: For accurate results, it's important that both non-gamblers and gamblers take part. Your opinion is very valuable for this study.

IF ASKED HOW WE GOT THEIR NUMBER, SAY: Your phone number was randomly selected from the electronic White Pages.

Q1. For demographic purposes, would you mind telling me your age please?

1	Below 18
2	18-24
3	25-29
4	30-34
5	35-39
6	40-44
7	45-49
8	50-54
9	55-59
10	60-64
11	65-69
12	70+
13	REFUSED

IF AGED BELOW 18 (CODE 1 ON Q1) SAY:
Thank you for your time, but we only wish to speak with people aged 18 and over.

SQ1b. I also need to ask for sampling purposes, how many people aged 18 or over usually live at this address?

QSEX. RECORD SEX OF RESPONDENT
1 MALE
2 FEMALE

SEX BY AGE
1 Male 18-24
2 Male 25-34
3 Male 35-49
4 Male 50+
5 Female 18-24
6 Female 25-34
7 Female 35-49
8 Female 50+

Thank you for your time and assistance.

SQ2a. I am now going to read out a list of popular gambling activities. Could you please tell me which of these you have participated in during the last 12 months in the Northern Territory?

1 Played poker machines or gaming machines
2 Bet on horse or greyhound races EXCLUDING sweeps
3 Bought INSTANT scratch tickets
4 Played lotto or ANY OTHER lottery game like Tattslotto, Powerball, the Pools, $2 Jackpot lottery, Tatts 2, or Tatts Keno
5 Played Keno at a club, hotel, casino or any other place
6 Played table games at a casino, such as Blackjack or Roulette
7 Played bingo at a club or hall
8 Bet on a sporting event like football, cricket, or tennis
9 Played casino games on the internet
10 Played games like cards, or mahjong, privately FOR MONEY at home or any other place
11 Bought raffle tickets
96 Played any other gambling activity EXCLUDING raffles or sweeps (PLEASE SPECIFY) (FIRST OTHER MENTION - SINGLE CODE)
97 Played any other gambling activity EXCLUDING raffles or sweeps (ALL OTHER MENTIONS - MULTICODES)
98 (DO NOT READ) NONE OF THE ABOVE

IF MORE THAN 1 OTHER MENTIONS (CODE 97 ON SQ2A):

PLEASE ENTER ALL OTHER MENTIONS HERE
97 OTHER (SPECIFY)
98 CAN'T SAY

IF ONLY "BOUGHT RAFFLE TICKETS" OR "NONE OF THE ABOVE" (CODE 11 OR 98 AT SQ2A), THEN SAY:
I still have a few other questions to ask you. It will only take about 5 minutes. (Is this a convenient time for you to take part in the rest of the survey?)
1 YES - AGREES TO TAKE PART
2 NO
IF NOT A CONVENIENT TIME, SAY: When is it convenient for me to call you back? Who should I ask for? I only need a first name [RECORD DETAILS FOR CALL BACK]
IF DOES NOT AGREE TO PARTICIPATE, SAY: I realise I am intruding on your time, but the results of this survey are for a very important Government study, and by participating the results will be more accurate. Please can you spare 5 minutes to participate?
1 YES - AGREES TO TAKE PART
2 NO

IF NOT WILLING TO PARTICIPATE, SAY:

Thank you for your time and assistance

IF MORE THAN ONE OTHER MENTION (CODES 96 AND 97 ON SQ2A), ASK:
SQ2B1. Of these other gambling activities that you just mentioned, which one have you played THE MOST in the last 12 months in the Northern Territory?
97 OTHER (SPECIFY THE OTHER GAMBLING PLAYED MOST)
98 (DO NOT READ) CAN'T SAY

IF PLAYED ANY OTHER GAMBLING ACTIVITY (CODE 96 AND NOT 97 AT SQ2A, OR CODE 97 AT SQ2B1 IF BOTH 96 AND 97 MENTIONED AT SQ2A, OR CODE 96 AT SQ2A IF CODE 98 MENTIONED AT SQ2B1).
SQ2b2a. In the last 12 months in the Northern Territory, how many times per week OR per month OR per year have you played [OpenResponse] #183. #178. #178. ?
1 Times per WEEK
2 Times per MONTH
3 Times per YEAR
4 CAN'T SAY

IF HAVE played poker machines or gaming machines (CODE 1 AT SQ2A)
SQ2c1. In the last 12 months in the Northern Territory, how many times per week OR per month OR per year have you played poker machines or gaming machines?
1   Times per WEEK
2   Times per MONTH
3   Times per YEAR
4   CAN'T SAY

IF NOT CAN'T SAY TO FREQUENCY PLAYED (CODE 1, 2 OR 3 ON SQ2c1) ASK: (Just to confirm, that is) you played poker machines or gaming machines [%SQ2C1][%SQ2C2][%SQ2C3] times per [%SQ2C].
1   CORRECT
2   INCORRECT

IF HAVE bought INSTANT scratch tickets (CODE 3 AT SQ2A)
SQ2c3. In the last 12 months in the Northern Territory, how many times per week OR per month OR per year have you bought INSTANT scratch tickets?
ENTER WEEK/MONTH/YEAR THEN RETURN FOR FREQUENCY
1   Times per WEEK
2   Times per MONTH
3   Times per YEAR
4   CAN'T SAY

IF NOT CAN'T SAY TO FREQUENCY PLAYED (CODE 1, 2 OR 3 ON SQ2c3) ASK: (Just to confirm, that is) you bought INSTANT scratch tickets [%SQ2E1][%SQ2E2][%SQ2E3] times per [%SQ2E].
1   CORRECT
2   INCORRECT

IF HAVE Played lotto or ANY OTHER lottery game like Tattslotto, Powerball, the Pools, $2 Jackpot lottery, Tatts 2, or Tatts Keno (CODE 4 AT SQ2A)
SQ2c4. In the last 12 months in the Northern Territory, how many times per week OR per month OR per year have you Played lotto or ANY OTHER lottery game like Tattslotto, Powerball, the Pools, $2 Jackpot lottery, Tatts 2, or Tatts Keno?
1   Times per WEEK
2   Times per MONTH
3   Times per YEAR
4   CAN'T SAY

IF NOT CAN'T SAY TO FREQUENCY PLAYED (CODE 1, 2 OR 3 ON SQ2c4) ASK: (Just to confirm, that is) you Played lotto or ANY OTHER lottery game like Tattslotto, Powerball, the Pools, $2 Jackpot lottery, Tatts 2, or Tatts Keno [%SQ2CF1][%SQ2F2][%SQ2F3] times per [%SQ2F].
1   CORRECT
2   INCORRECT

IF HAVE Played Keno at a club, hotel, casino or any other place (CODE 5 AT SQ2A)
SQ2c5. In the last 12 months in the Northern Territory, how many times per week OR per month OR per year have you Played Keno at a club, hotel, casino or any other place?
1   Times per WEEK
2   Times per MONTH
3   Times per YEAR
4   CAN'T SAY
IF NOT CAN'T SAY TO FREQUENCY PLAYED (CODE 1, 2 OR 3 ON SQ2c5) ASK:(Just to confirm, that is) you Played Keno at a club, hotel, casino or any other place [%SQ2G1][%SQ2G2][%SQ2G3] times per [%SQ2G].
1   CRRECT
2   INCORRECT

IF HAVE Played table games at a casino such as Blackjack or Roulette (CODE 6 AT SQ2A)
SQ2c6. In the last 12 months in the Northern Territory, how many times per week OR per month OR per year have you played table games at a casino such as Blackjack or Roulette?
1   Times per WEEK
2   Times per MONTH
3   Times per YEAR
4   CAN'T SAY
IF NOT CAN'T SAY TO FREQUENCY PLAYED (CODE 1, 2 OR 3 ON SQ2c6) ASK: (Just to confirm, that is) you Played table games at a casino such as Blackjack or Roulette [%SQ2H1][%SQ2H2][%SQ2H3] times per [%SQ2H].
1   CORRECT
2   INCORRECT
IF HAVE Played bingo at a club or hall (CODE 7 AT SQ2A)
SQ2c7. In the last 12 months in the Northern Territory, how many times per week OR per month OR per year have you Played bingo at a club or hall?
1   Times per WEEK
2   Times per MONTH

3   Times per YEAR
4   CAN'T SAY

IF NOT CAN'T SAY TO FREQUENCY PLAYED (CODE 1, 2 OR 3 ON SQ2c7) ASK:(Just to confirm, that is) you Played bingo at a club or hall [%SQ2I1][%SQ2I2][%SQ2I3] times per [%SQ2I].
1   CORRECT
2   INCORRECT

IF HAVE Played casino games on the internet (CODE 9 AT SQ2A)
SQ2c9. In the last 12 months in the Northern Territory, how many times per week OR per month OR per year have you played casino games on the internet?1
      Times per WEEK
2   Times per MONTH
3   Times per YEAR
4   CAN'T SAY

IF NOT CAN'T SAY TO FREQUENCY PLAYED (CODE 1, 2 OR 3 ON SQ2c9) ASK:(Just to confirm, that is) you Played casino games on the internet [%SQ2K1][%SQ2K2][%SQ2K3] times per [%SQ2K].
1   CORRECT
2   INCORRECT

IF HAVE Played games like cards, or mahjong, privately FOR MONEY at home or any other place (CODE 10 AT SQ2A)
SQ2c10. In the last 12 months in the Northern Territory, how many times per week OR per month OR per year have you played games like cards, or mahjong, privately FOR MONEY at home or any other place?
1   Times per WEEK
2   Times per MONTH
3   Times per YEAR
4   CAN'T SAY

IF NOT CAN'T SAY TO FREQUENCY PLAYED (CODE 1, 2 OR 3 ON SQ2c10) ASK:
(Just to confirm, that is) you Played games like cards, or mahjong, privately FOR MONEY at home or any other place [%SQ2L1][%SQ2L2][%SQ2L3] times per [%SQ2L].
1   CORRECT
2   INCORRECT

IF HAVE bet on horse or greyhound races EXCLUDING sweeps (CODE 2 AT SQ2A)

SQ2c2. In the last 12 months in the Northern Territory, how many DAYS per week OR per month OR per year have you bet on horse or greyhound races EXCLUDING sweeps?
1   Times per WEEK
2   Times per MONTH
3   Times per YEAR
4   CAN'T SAY

IF NOT CAN'T SAY TO FREQUENCY PLAYED (CODE 1, 2 OR 3 ON SQ2c2) ASK: (Just to confirm, that is) you bet on horse or greyhound races EXCLUDING sweeps [%SQ2D1][%SQ2D2][%SQ2D3] times per [%SQ2D].
1   CORRECT
2   INCORRECT

IF HAVE Bet on a sporting event like football, cricket, or tennis (CODE 8 AT SQ2A)SQ2c8. In the last 12 months in the Northern Territory, how many DAYS per week OR per month OR per year have you Bet on a sporting event like football, cricket, or tennis?
1   Times per WEEK
2   Times per MONTH
3   Times per YEAR
4   CAN'T SAY

IF NOT CAN'T SAY TO FREQUENCY PLAYED (CODE 1, 2 OR 3 ON SQ2c8) ASK: (Just to confirm, that is) you Bet on a sporting event like football, cricket, or tennis [%SQ2J1][%SQ2J2][%SQ2J3] times per [%SQ2J].
1   CORRECT
2   INCORRECT

IF RESPONDENT IS A GAMBLER SAY:
We think you will make an ideal participant for the rest of this survey. (It takes ONLY about 10 or 15 minutes. Is this a convenient time for you to continue or would you prefer that we call you back some other time?)
IF NOT A CONVENIENT TIME, SAY: When is it convenient for me to call you back? Who should I ask for? I only need a first name.
IF DOES NOT AGREE TO CONTINUE, SAY:
The results of this survey are part of a very important Government study, and by participating the results will be more accurate. Please can you spare the time to participate?
1   YES - AGREES TO TAKE PART
2   NO

IF NOT WILLING TO PARTICIPATE, SAY:
Thank you for your time and assistance

SECTION A: COMMUNITY ATTITUDES TOWARDS GAMBLING

ASK EVERYONE

As you know, gambling is a popular leisure activity for many people. I am going to read out some statements about gambling that I would like to hear your opinion about.

B1. What do you think of the statement that overall, gambling does more good than harm for your local community? Do you ...#/strongly agree, slightly agree, neither agree nor disagree, slightly disagree or strongly disagree/strongly disagree, slightly disagree, neither disagree nor agree, slightly agree or strongly agree/?

1   STRONGLY AGREE
2   SLIGHTLY AGREE
3   NEITHER AGREE NOR DISAGREE
4   SLIGHTLY DISAGREE
5   STRONGLY DISAGREE
6   DON'T KNOW/CAN'T SAY

B2. Do you think the number of poker machines and other gaming machines currently available in your local community should be increased, decreased or stay the same?
PROBE: **And do you think the increase/decrease should be small or large?**

1   A LARGE INCREASE
2   A SMALL INCREASE
3   STAY THE SAME
4   A SMALL DECREASE
5   A LARGE DECREASE
6   HAVE NO OPINION/CAN'T SAY

IF NUMBER OF MACHINES SHOULD BE INCREASED OR DECREASED (CODES 1, 2 4 OR 5 AT B2), ASK:
B3 Poker machines and gaming machines are located in clubs, hotels and casinos in the Northern Territory. Where do you think the number of machines should be #/increased/decreased/? Would you say ... in clubs?
1   YES
2   NO

3   CAN'T SAY
B3 (Poker machines and gaming machines are located in clubs, hotels and casinos in the Northern Territory. Where do you think the number of machines should be #/increased/decreased/?) Would you say ...in hotels?
1   YES
2   NO
3   CAN'T SAY
B3 (Poker machines and gaming machines are located in clubs, hotels and casinos in the Northern Territory. Where do you think the number of machines should be #/increased/decreased/?) Would you say ...in casinos?
1   YES
2   NO
3   CAN'T SAY

Thinking about the benefits and drawbacks of having poker machines in the Northern Territory.
QB4. What do you see as the benefits for the Northern Territory of having poker machines at clubs, hotels and casinos?
PROBE FULLY
97 OTHER (SPECIFY)
98 NONE/ NO BENEFITS
99 CAN'T SAY
QB5. What do you see as the drawbacks for the Northern Territory of having poker machines at clubs, hotels and casinos?
PROBE FULLY
97 OTHER (SPECIFY)
98 NONE/ NO DRAWBACKS
99 CAN'T SAY

SECTION B: GAMBLING BEHAVIOUR (DURATION AND EXPENDITURE) for each item in SQ2a.

ASK ALL REGULAR AND NON-REGULAR GAMBLERS (CODE 1 OR 2 AT REGULAR)

IF PLAYED POKER MACHINES OR GAMING MACHINES (QUESTION sq2A CODED 1)

Next some questions about the gaming machines you played in the NORTHERN TERRITORY. You mentioned earlier that you played poker machines or gaming machines

[%SQ2C1][%SQ2C2][%SQ2C3] times per [%SQ2C] IN THE LAST 12 MONTHS.

C0. What type of gaming machine do you USUALLY play?

1	Poker machines ('pokies')
2	Video card machines
3	Video keno machines
97	Or some other gaming machine (PLEASE SPECIFY)
98	CAN'T SAY

C1a. In the last 12 months, how many times per week OR per month OR per year have you visited a CLUB and played #/poker// #/video card// #/video keno// #/other gaming// #/poker// machines?

1	Times per WEEK
2	Times per MONTH
3	Times per YEAR
4	CAN'T SAY
5	NONE

PLAYED POKER MACHINES OR GAMING MACHINES (QUESTION sq2A CODED 1)

C1b. And in the last 12 months, how many times per week OR per month OR per year have you visited a PUB or HOTEL and played #/poker// #/video card// #/video keno// #/other gaming// #/poker// machines?

1	Times per WEEK
2	Times per MONTH
3	Times per YEAR
4	CAN'T SAY
5	NONE

IF PLAYED POKER MACHINES OR GAMING MACHINES (QUESTION sq2A CODED 1)

C1c. And in the last 12 months, how many times per week OR per month OR per year have you visited a CASINO and played #/poker// #/video card// #/video keno// #/other gaming// #/poker// machines?

1	Times per WEEK
2	Times per MONTH
3	Times per YEAR
4	CAN'T SAY
5	NONE

IF PLAYED POKER MACHINES OR GAMING MACHINES (QUESTION sq2A CODED 1)

C2. For how long do you usually play the #/poker// #/video card// #/video keno//

#/other gaming// #/poker// machines when you visit a venue?

Record hours and minutes.

IF NOT CAN'T SAY ON C2A:

Record minutes.

C2. (For how long do you usually play the #/poker// #/video card// #/video keno// #/other gaming// #/poker// machines when you visit a venue?)

IF CAN'T SAY ENCOURAGE BEST GUESS IF ANSWER ONLY GIVEN IN HOURS, ENTER 0 MINUTES

IF PLAYED POKER MACHINES OR GAMING MACHINES (QUESTION sq2A CODED 1)

C4. When you visit a venue, how much money do you usually take with you to play the #/poker// #/video card// #/video keno// #/other gaming// #/poker// machines, including any additional money withdrawn or borrowed during the period of play?

Record amount in dollars.

C5. And how much money do you usually have left when you finish playing the #/poker// #/video card// #/video keno// #/other gaming// #/poker// machines?

Record amount in dollars.

IF CAN'T SAY (CODE 99999 ON C4 OR C5) ASK C5B

C5B. Do you usually lose or win when you play these machines?

1	USUALLY WIN
2	USUALLY LOSE
3	CAN'T SAY

IF USUALLY WIN (CODE 1 AT C5B)

C5b2. So how much money do you USUALLY WIN?

Record amount in dollars.

IF USUALLY LOSE (CODE 2 AT C5B)

C5b3. So how much money do you USUALLY LOSE?

Record amount in dollars.

IF PLAYED POKER MACHINES OR GAMING MACHINES (QUESTION sq2A CODED 1)

C6. Do you usually set yourself a limit when you gamble on poker machines?

1	YES

2   NO
3   CAN'T SAY

IF SET SELF LIMIT (CODE 1 ON C6) ASK:
C7. Do you stick to the limit you set yourself #/never, rarely, sometimes, often or always /always, often, sometimes, rarely or never/?
1   NEVER
2   RARELY
3   SOMETIMES
4   OFTEN
5   ALWAYS
6   CAN'T SAY

IF BET ON HORSE OR GREYHOUND RACES (CODE 2 AT sQ2A)

Next some questions about your betting on horse or greyhound races in the NORTHERN TERRITORY. You mentioned earlier that you bet on horse or greyhound races EXCLUDING sweeps [%SQ2D1][%SQ2D2][%SQ2D3] times per [%SQ2D] IN THE LAST 12 MONTHS.

D1a. In the last 12 months, on how many DAYS per WEEK or per MONTH or per YEAR have you bet on the races AT A RACETRACK?
1   Times per WEEK
2   Times per MONTH
3   Times per YEAR
4   CAN'T SAY
5   NONE

D1b. And in the last 12 months, on how many DAYS per week or per month or per year have you bet on the races at an OFF-COURSE VENUE such as a TAB agency, club or hotel?
1   Times per WEEK
2   Times per MONTH
3   Times per YEAR
4   CAN'T SAY
5   NONE

IF BET ON HORSE OR GREYHOUND RACES (CODE 2 AT sQ2A)

D1c. And in the last 12 months, on how many DAYS per week or per month or per year have you bet on the races by PHONE?
1   Times per WEEK
2   Times per MONTH
3   Times per YEAR
4   CAN'T SAY

5   NONE

IF BET ON HORSE OR GREYHOUND RACES (CODE 2 AT sQ2A)

D1d. And in the last 12 months, on how many DAYS per week or per month or per year have you bet on the races VIA THE INTERNET?
1   Times per WEEK
2   Times per MONTH
3   Times per YEAR
4   CAN'T SAY
5   NONE

IF BET ON HORSE OR GREYHOUND RACES ONLY ONCE IN LAST 12 MONTHS, THEN ASK:
D3a. How much money did you outlay on that occasion?
Record amount in dollars.
D4a. And how much, if any, did you win?
Record amount in dollars.
D6A1. Do you usually set yourself a limit when you bet on the races?
1   YES
2   NO
3   CAN'T SAY

IF SET SELF LIMIT (CODE 1 ON D6A1) ASK:
D7A1. Do you stick to the limit you set yourself #/never, rarely, sometimes, often or always /always, often, sometimes, rarely or never/?
1   NEVER
2   RARELY
3   SOMETIMES
4   OFTEN
5   ALWAYS
6   CAN'T SAY

IF BET MORE THAN ONCE ON COURSE IN LAST 12 MONTHS, THEN ASK:
D3b Thinking of when you go to a racecourse, how much money do you usually take with you to bet on the races, including any additional money withdrawn or borrowed during your time at the races?
Record amount in dollars.
D4b. And how much money do you usually have left when you leave the races?
Record amount in dollars.

D5b1. Do you usually win or lose during a day at the races?

1	USUALLY WIN
2	USUALLY LOSE
3	CAN'T SAY

IF USUALLY WIN (CODE 1 AT D5B1) OR D3B LESS THAN D4B

D5b2. So how much money do you USUALLY WIN during a day at the races?

Record amount in dollars.

IF USUALLY LOSE (CODE 2 AT D5B1 OR D4B LESS THAN D3B)

D5b3. So how much money do you USUALLY LOSE during a day at the races?

Record amount in dollars.

IF BET MORE THAN ONCE ON COURSE IN LAST 12 MONTHS, THEN ASK:

D6A. Do you usually set yourself a limit when you bet on the races?

1	YES
2	NO
3	CAN'T SAY

IF SET SELF LIMIT (CODE 1 ON D6A) ASK:

D7A. Do you stick to the limit you set yourself #/never, rarely, sometimes, often or always /always, often, sometimes, rarely or never/?

1	NEVER
2	RARELY
3	SOMETIMES
4	OFTEN
5	ALWAYS
6	CAN'T SAY

IF BET MORE THAN ONCE OFF COURSE IN LAST 12 MONTHS, THEN ASK:

D3c How much money do you usually outlay on the races each day you bet off-course at a TAB, club or hotel?

Record amount in dollars.

D4c. And how much money do you usually have left at the end of the day's betting?

Record amount in dollars.

IF CAN'T SAY AT D3C OR D4C

D5c1. Do you usually lose or win during a day's betting off-course at the TAB, club or hotel?

1	USUALLY WIN
2	USUALLY LOSE
3	CAN'T SAY

Record amount in dollars.

IF USUALLY WIN (CODE 1 AT D5c1)

D5c2. So how much money do you USUALLY WIN during a day's betting off-course at the TAB, club or hotel?

Record amount in dollars.

IF USUALLY LOSE (CODE 2 AT D5c1)

D5c3. So how much money do you USUALLY LOSE during a day's betting off-course at the TAB, club or hotel?

Record amount in dollars.

IF BET MORE THAN ONCE OFF COURSE IN LAST 12 MONTHS, THEN ASK:

D6B. Do you usually set yourself a limit when you bet off-course at the TAB, club or hotel?

1	YES
2	NO
3	CAN'T SAY

IF SET SELF LIMIT (CODE 1 ON D6B) ASK:

D7B. Do you stick to the limit you set yourself #/never, rarely, sometimes, often or always /always, often, sometimes, rarely or never/?

1	NEVER
2	RARELY
3	SOMETIMES
4	OFTEN
5	ALWAYS
6	CAN'T SAY

IF BET MORE THAN ONCE BY PHONE IN LAST 12 MONTHS, THEN ASK:

D3D How much money do you usually outlay on the races each day you bet by phone?

Record amount in dollars.

D4D. And how much money do you usually have left at the end of the day's betting?

Record amount in dollars.

IF CAN'T SAY ON D3D OR D4D ASK:

D5D1. Do you usually lose or win during a day's betting by phone?

1 USUALLY WIN
2 USUALLY LOSE
3 CAN'T SAY
Record amount in dollars.

IF USUALLY WIN (CODE 1 AT D5d1)
D5d2. So how much money do you
USUALLY WIN during a day's betting by
phone?
Record amount in dollars.

IF USUALLY LOSE (CODE 2 AT D5d1)
D5d3. So how much money do you
USUALLY LOSE during a day's betting
by phone?
Record amount in dollars.

IF BET MORE THAN ONCE BY
PHONE IN LAST 12 MONTHS,
THEN ASK:
D6C. Do you usually set yourself a limit
when you bet by phone?
1 YES
2 NO
3 CAN'T SAY

IF SET SELF LIMIT (CODE 1 ON D6C)
ASK:
D7C. Do you stick to the limit you set
yourself #/never, rarely, sometimes, often
or always /always, often, sometimes,
rarely or never/?
1 NEVER
2 RARELY
3 SOMETIMES
4 OFTEN
5 ALWAYS
6 CAN'T SAY

IF BET MORE THAN ONCE VIA THE
INTERNET IN LAST 12 MONTHS, THEN
ASK:D3E How much money do you
usually outlay on the races each day you
bet via the internet?
Record amount in dollars.

D4e. And how much money do you
usually have left at the end of the day's
betting?
Record amount in dollars.

IF CAN'T SAY ON D3E OR D4E
D5e1. Do you usually lose or win during a
day's betting via the internet?
1 USUALLY WIN
2 USUALLY LOSE

3 CAN'T SAY
Record amount in dollars.

IF USUALLY WIN (CODE 1 AT D5e1)
D5e2. So how much money do you
USUALLY WIN during a day's betting
via the internet?
Record amount in dollars.

IF USUALLY LOSE (CODE 2 AT D5e1)
D5e3. So how much money do you
USUALLY LOSE during a day's betting
via the internet?
Record amount in dollars.

IF BET MORE THAN ONCE VIA
THE INTERNET IN LAST 12
MONTHS, THEN ASK:
D6D. Do you usually set yourself a limit
when you bet via the internet?
1 YES
2 NO
3 CAN'T SAY

IF SET SELF LIMIT (CODE 1 ON D6D)
ASK:
D7D. Do you stick to the limit you set
yourself #/never, rarely, sometimes, often
or always /always, often, sometimes,
rarely or never/?
1 NEVER
2 RARELY
3 SOMETIMES
4 OFTEN
5 ALWAYS
6 CAN'T SAY

IF BOUGHT INSTANT SCRATCH
TICKETS (CODE 3 AT sQ2A)
Next some questions about your buying instant
scratch tickets in the NORTHERN TERRITORY.
You mentioned earlier that you bought INSTANT
SCRATCH TICKETS
[%SQ2E1][%SQ2E2][%SQ2E3] times per
[%SQ2E] IN THE LAST 12 MONTHS.
E2. How much money do you usually
outlay each time you buy instant scratch
tickets?
Record amount in dollars.
E3. And approximately how much money
would you say you have won from the
instant scratch tickets you have bought in
the last [%SQ2E]?
Record amount in dollars.

IF CAN'T SAY ON E2 OR E3 ASK:

E4. Do you usually lose or win from the instant scratch tickets?
1   USUALLY WIN
2   USUALLY LOSE
3   CAN'T SAY

IF USUALLY WIN (CODE 1 AT e4)
E4B. So how much money do you USUALLY WIN?
Record amount in dollars.

IF USUALLY LOSE (CODE 2 AT e4)
E4c. So how much money do you USUALLY LOSE?
Record amount in dollars.

IF BOUGHT INSTANT SCRATCH TICKETS (CODE 3 AT sQ2A) ASK:

E6. Do you usually set yourself a limit when you buy instant scratch tickets?
1   YES
2   NO
3   CAN'T SAY

IF SET SELF LIMIT (CODE 1 ON E6) ASK:
E7. Do you stick to the limit you set yourself #/never, rarely, sometimes, often or always /always, often, sometimes, rarely or never/?
1   NEVER
2   RARELY
3   SOMETIMES
4   OFTEN
5   ALWAYS
6   CAN'T SAY

IF PLAYED LOTTO OR ANY OTHER LOTTERY GAME (QUESTION sq2a CODED 4)
F1. Thinking about the lottery games you have played in the last 12 months. I will now read out a list of games. Please tell me if you have played any of these games in the LAST 12 MONTHS in the NORTHERN TERRITORY.
READ OUT
1   Tuesday Oz Lotto
2   Wednesday Tattslotto
3   Saturday Tattslotto
4   Powerball
5   Super 66
6   The Pools
7   Tatts 2
8   Tatts Keno
9   NONE OF THESE

IF PLAYED Tuesday Oz Lotto IN LAST 12 MONTHS (CODE 1 AT F1)
F2A. How many times per week OR per month OR per year DO you play Tuesday Oz Lotto?
1   Times per WEEK
2   Times per MONTH
3   Times per YEAR
4   CAN'T SAY
F3A. And how much money do you usually outlay each time you play Tuesday Oz Lotto?
Record amount in dollars.

IF PLAYED Wednesday Tattslotto IN LAST 12 MONTHS (CODE 2 AT F1)
F2B. How many times per week OR per month OR per year DO you play Wednesday Tattslotto?
1   Times per WEEK
2   Times per MONTH
3   Times per YEAR
4   CAN'T SAY
F3B. And how much money do you usually outlay each time you play Wednesday Tattslotto?
Record amount in dollars.

IF PLAYED Saturday Tattslotto IN LAST 12 MONTHS (CODE 3 AT F1)
F2C. How many times per week OR per month OR per year DO you play Saturday Tattslotto?
1   Times per WEEK
2   Times per MONTH
3   Times per YEAR
4   CAN'T SAY
F3C. And how much money do you usually outlay each time you play Saturday Tattslotto?
Record amount in dollars.

IF PLAYED Powerball IN LAST 12 MONTHS (CODE 4 AT F1)
F2D. How many times per week OR per month OR per year DO you play Powerball?
1   Times per WEEK
2   Times per MONTH
3   Times per YEAR
4   CAN'T SAY
F3D. And how much money do you usually outlay each time you play Powerball?
Record amount in dollars.

IF PLAYED Super 66 IN LAST 12 MONTHS (CODE 5 AT F1)

F2E. How many times per week OR per month OR per year DO you play Super 66?

1   Times per WEEK
2   Times per MONTH
3   Times per YEAR
4   CAN'T SAY

F3E. And how much money do you usually outlay each time you play Super 66?

Record amount in dollars.

IF PLAYED The Pools IN LAST 12 MONTHS (CODE 6 AT F1)

F2F. How many times per week OR per month OR per year DO you play The Pools?

1   Times per WEEK
2   Times per MONTH
3   Times per YEAR
4   CAN'T SAY

F3F. And how much money do you usually outlay each time you play The Pools?

Record amount in dollars.

IF PLAYED Tatts 2 IN LAST 12 MONTHS (CODE 7 AT F1)

F2G. How many times per week OR per month OR per year DO you play Tatts 2?

1   Times per WEEK
2   Times per MONTH
3   Times per YEAR
4   CAN'T SAY

F3G. And how much money do you usually outlay each time you play Tatts 2?
Record amount in dollars.

IF PLAYED Tatts Keno IN LAST 12 MONTHS (CODE 8 AT F1)

F2H. How many times per week OR per month OR per year DO you play Tatts Keno?

1   Times per WEEK
2   Times per MONTH
3   Times per YEAR
4   CAN'T SAY

F3H. And how much money do you usually outlay each time you play Tatts Keno?
Record amount in dollars.

F4. Have you played any other lottery games in the last 12 months?
IF YES, RECORD NAME OF LOTTERY
97   YES (PLEASE SPECIFY)

98   NO
99   CAN'T SAY

F2. How many times per week OR per month OR per year DO you play OTHER LOTTERY GAMES ?

1   Times per WEEK
2   Times per MONTH
3   Times per YEAR
4   CAN'T SAY
5   NONE

<u>IF PLAYED ANY OTHER LOTTERY GAMES IN LAST 12 MONTHS (CODE 97 AT F4) ASK:</u>

F3. And how much money do you usually outlay each time you play other lottery games?

Record amount in dollars.

<u>IF PLAYED LOTTO OR ANY OTHER LOTTERY GAME (QUESTION sq2a CODED 4) ASK:</u>

F5. Approximately how much money would you say you have won from the lottery games you have played in the last 12 months?
Record amount in dollars.

F6. Do you usually set yourself a limit when you play lottery games?

1   YES
2   NO
3   CAN'T SAY

IF SET SELF LIMIT (CODE 1 ON F6) ASK:

F7. Do you stick to the limit you set yourself #/never, rarely, sometimes, often or always /always, often, sometimes, rarely or never/?

1   NEVER
2   RARELY
3   SOMETIMES
4   OFTEN
5   ALWAYS
6   CAN'T SAY

IF PLAYED TABLE GAMES AT CASINO (QUESTION sq2a CODED 6)
Next some questions about your playing table games at a casino in the NORTHERN TERRITORY. You mentioned earlier that you play TABLE GAMES AT A CASINO, SUCH AS ROULETTE OR BLACKJACK, [%SQ2H1][%SQ2H2][%SQ2H3] times per [%SQ2H] IN THE LAST 12 MONTHS.

G2. For how long do you usually play the table games when you visit a casino?
RECORD HOURS HERE AND RETURN TO RECORD MINUTES
IF CAN'T SAY ENCOURAGE BEST GUESS
IF STILL CAN'T SAY ENTER D

IF NOT CAN'T SAY ON G2A ASK:
RECORD MINUTES HERE
G2. (For how long do you usually play the table games when you visit a casino?)
IF CAN'T SAY ENCOURAGE BEST GUESS
IF ANSWER ONLY GIVEN IN HOURS, ENTER 0 MINUTES

IF PLAYED TABLE GAMES AT CASINO (QUESTION sq2a CODED 6) ASK:

G4. How much money do you usually take with you to play the table games, including any additional money withdrawn or borrowed during the period of play?
Record amount in dollars.
G5. And how much money do you usually have left when you finish playing the table games?
Record amount in dollars.

IF CAN'T SAY ON G4 OR G5 ASK:
G6. Do you usually lose or win when playing the table games?
1   USUALLY WIN
2   USUALLY LOSE
3   CAN'T SAY

IF USUALLY WIN (CODE 1 AT g6)
G6b. So how much money do you USUALLY WIN?
Record amount in dollars.

IF USUALLY LOSE (CODE 2 AT G6)
G6C. So how much money do you USUALLY LOSE?
Record amount in dollars.

IF PLAYED TABLE GAMES AT CASINO (QUESTION sq2a CODED 6) ASK:

G6D. Do you usually set yourself a limit when you play table games?
1   YES
2   NO
3   CAN'T SAY

IF SET SELF LIMIT (CODE 1 ON G6D) ASK:
G7. Do you stick to the limit you set yourself #/never, rarely, sometimes, often or always /always, often, sometimes, rarely or never/?
1   NEVER
2   RARELY
3   SOMETIMES
4   OFTEN
5   ALWAYS
6   CAN'T SAY

IF PLAYED KENO AT A CLUB, HOTEL, CASINO OR ELSEWHERE (QUESTION SQ2A CODED 5)
Next some questions about your playing Keno in the NORTHERN TERRITORY. You mentioned earlier that you have played KENO [%SQ2G1][%SQ2G2][%SQ2G3] times per [%SQ2G] IN THE LAST 12 MONTHS.
H2. For how long do you usually play Keno on those occasions?
RECORD HOURS HERE AND RETURN TO RECORD MINUTES
IF CAN'T SAY ENCOURAGE BEST GUESS
IF STILL CAN'T SAY ENTER D

IF NOT CAN'T SAY ON H2A
RECORD MINUTES HERE
H2. (For how long do you usually play Keno on those occasions?)
IF CAN'T SAY ENCOURAGE BEST GUESS
IF ANSWER ONLY GIVEN IN HOURS, ENTER 0 MINUTES

IF PLAYED KENO AT A CLUB, HOTEL, CASINO OR ELSEWHERE (QUESTION SQ2A CODED 5)

H3 How much money do you usually take with you to play Keno, including any additional money withdrawn or borrowed during the period of play?
Record amount in dollars.

H4. And how much money do you usually have left when you finish playing Keno?
Record amount in dollars.

IF CAN'T SAY ON H3 OR H4
H5. Do you usually lose or win when you play Keno?
1   USUALLY WIN
2   USUALLY LOSE
3   CAN'T SAY

IF USUALLY WIN (CODE 1 AT h5)
H6A. So how much money do you USUALLY WIN?
Record amount in dollars.

IF USUALLY LOSE (CODE 2 AT h5)
H6B. So how much money do you USUALLY LOSE?
Record amount in dollars.

IF PLAYED KENO AT A CLUB, HOTEL, CASINO OR ELSEWHERE (QUESTION SQ2A CODED 5)
H6. Do you usually set yourself a limit when you play Keno?
1   YES
2   NO
3   CAN'T SAY

IF SET SELF LIMIT (CODE 1 ON H6) ASK:
H7. Do you stick to the limit you set yourself #/never, rarely, sometimes, often or always /always, often, sometimes, rarely or never/?
1   NEVER
2   RARELY
3   SOMETIMES
4   OFTEN
5   ALWAYS
6   CAN'T SAY

IF PLAYED BINGO AT A CLUB OR HALL (QUESTION SQ2A CODED 7)
Next some questions about your playing Bingo in the NORTHERN TERRITORY. You mentioned earlier that you have played BINGO [%SQ2I1][%SQ2I2][%SQ2I3] times per [%SQ2I] IN THE LAST 12 MONTHS.
I2. For how long do you usually play Bingo when you visit a venue?
RECORD HOURS HERE AND RETURN TO RECORD MINUTES
IF CAN'T SAY ENCOURAGE BEST GUESS
IF STILL CAN'T SAY ENTER D

IF NOT CAN'T SAY ON I2A ASK:
RECORD MINUTES HERE
I2. (For how long do you usually play Bingo when you visit a venue?)
IF CAN'T SAY ENCOURAGE BEST GUESS
IF ANSWER ONLY GIVEN IN HOURS, ENTER 0 MINUTES
IF PLAYED BINGO AT A CLUB OR HALL (QUESTION SQ2A CODED 7)
H3 How much money do you usually take with you to play Bingo, including any

additional money withdrawn or borrowed during the period of play?
Record amount in dollars.
H4. And how much money do you usually have left when you finish playing Bingo?
Record amount in dollars.

IF CAN'T SAY ON I3 OR I4 ASK:
I5. Do you usually lose or win when you play Bingo?
1   USUALLY WIN
2   USUALLY LOSE
3   CAN'T SAY

IF USUALLY WIN (CODE 1 AT i5)
I6A. So how much money do you USUALLY WIN?
Record amount in dollars.

IF USUALLY LOSE (CODE 2 AT i5)
I6B. So how much money do you USUALLY LOSE?
Record amount in dollars.

IF PLAYED BINGO AT A CLUB OR HALL (QUESTION SQ2A CODED 7)
QB6. Do you usually set yourself a limit when you play Bingo?
1   YES
2   NO
3   CAN'T SAY

IF SET SELF LIMIT (CODE 1 ON QB6) ASK:
QB7. Do you stick to the limit you set yourself #/never, rarely, sometimes, often or always /always, often, sometimes, rarely or never/?
1   NEVER
2   RARELY
3   SOMETIMES
4   OFTEN
5   ALWAYS
6   CAN'T SAY

IF BET ON A SPORTING EVENT (EG. FOOTBALL, CRICKET, TENNIS) (QUESTION SQ2A CODED 8)
Next some questions about your sports betting in the NORTHERN TERRITORY. You mentioned earlier that you have PLACED SPORTS BETS [%SQ2J1][%SQ2J2][%SQ2J3] times per [%SQ2J] IN THE LAST 12 MONTHS.
J0. How do you usually place your sports bets?
1   By phone
2   In person

3 Via the Internet
4 CAN"T SAY

J2 How much money do you usually outlay each day you place sports bets?
Record amount in dollars.

J3. And how much money do you usually end up with at the end of the day's betting?
Record amount in dollars.

IF CAN'T SAY ON J2 OR J3 ASK:
J4a. Do you usually lose or win during a day's betting?
1 USUALLY WIN
2 USUALLY LOSE
3 CAN'T SAY

IF USUALLY WIN (CODE 1 AT j4a)
J5A. So how much money do you USUALLY WIN?
Record amount in dollars.

IF USUALLY LOSE (CODE 2 AT j4a)
J5B. So how much money do you USUALLY LOSE?
Record amount in dollars.

IF BET ON A SPORTING EVENT (EG. FOOTBALL, CRICKET, TENNIS) (QUESTION SQ2A CODED 8)

E6. Do you usually set yourself a limit when you place sports bets?
1 YES
2 NO
3 CAN'T SAY

IF SET SELF LIMIT (CODE 1 ON J6) ASK:
J7. Do you stick to the limit you set yourself #/never, rarely, sometimes, often or always /always, often, sometimes, rarely or never/?
1 NEVER
2 RARELY
3 SOMETIMES
4 OFTEN
5 ALWAYS
6 CAN'T SAY

IF PLAYED CASINO GAMES ON THE INTERNET (QUESTION SQ2A CODED 9)
Next some questions about your playing casino games in the NORTHERN TERRITORY. You mentioned earlier that you played casino games on the internet [%SQ2K1][%SQ2K2][%SQ2K3] times per [%SQ2K] IN THE LAST 12 MONTHS.

K2. For how long do you usually play casino games when you gamble on the internet?
RECORD HOURS HERE AND RETURN TO RECORD MINUTES
IF CAN'T SAY ENCOURAGE BEST GUESS
IF STILL CAN'T SAY ENTER D

IF NOT CAN'T SAY ON K2A ASK:
RECORD MINUTES HERE
K2. (For how long do you usually play casino games when you gamble on the internet?)
IF CAN'T SAY ENCOURAGE BEST GUESS
IF ANSWER ONLY GIVEN IN HOURS, ENTER 0 MINUTES

IF PLAYED CASINO GAMES ON THE INTERNET (QUESTION SQ2A CODED 9)

K3. How much money do you usually outlay each time you play casino games on the internet?
Record amount in dollars.
K4. And how much money do you usually have left when you finish playing casino games on the internet?
Record amount in dollars.

IF CAN'T SAY ON K3 OR K4 ASK:
K5. Do you usually lose or win when you play Casino games on the INTERNET?
1 USUALLY WIN
2 USUALLY LOSE
3 CAN'T SAY

IF USUALLY WIN (CODE 1 AT k5)
K6A. So how much money do you USUALLY WIN?
Record amount in dollars.

IF USUALLY LOSE (CODE 2 AT k5)
K6B. So how much money do you USUALLY LOSE?
Record amount in dollars.

IF PLAYED CASINO GAMES ON THE INTERNET (QUESTION SQ2A CODED 9)

K6C. Do you usually set yourself a limit when you play casino games on the internet?
1 YES
2 NO
3 CAN'T SAY

IF SET SELF LIMIT (CODE 1 ON K6C) ASK:

K7. Do you stick to the limit you set yourself #/never, rarely, sometimes, often or always /always, often, sometimes, rarely or never/?

1   NEVER
2   RARELY
3   SOMETIMES
4   OFTEN
5   ALWAYS
6   CAN'T SAY

IF PLAYED GAMES PRIVATELY FOR MONEY (QUESTION SQ2A CODED 10)

Next some questions about your playing games like cards or mahjong in the NORTHERN TERRITORY. You mentioned earlier that you played games privately for money [%SQ2L1][%SQ2L2][%SQ2L3] times per [%SQ2L] IN THE LAST 12 MONTHS.

L0. What games have you played privately for money in the last 12 months in the NORTHERN TERRITORY?

RECORD NAMES OF GAMES
1   POKER/ BASIC POKER
97   OTHER (PLEASE SPECIFY)
98   CAN'T SAY

L2. For how long do you gamble each time you play?

RECORD HOURS HERE AND RETURN TO RECORD MINUTES
IF CAN'T SAY ENCOURAGE BEST GUESS
IF STILL CAN'T SAY ENTER D

IF NOT CAN'T SAY ON L2 ASK:
RECORD MINUTES HERE

L2. (For how long do you gamble each time you play?)
IF CAN'T SAY ENCOURAGE BEST GUESS
IF ANSWER ONLY GIVEN IN HOURS, ENTER 0 MINUTES

IF PLAYED GAMES PRIVATELY FOR MONEY (QUESTION SQ2A CODED 10)

L3. How much money do you usually outlay each time you play?
Record amount in dollars.

L4. And how much money do you usually have left when you finish playing?
Record amount in dollars.

IF CAN'T SAY ON L3 OR L4 ASK:
L5. Do you usually lose or win each time you play?
1   USUALLY WIN

2   USUALLY LOSE
3   CAN'T SAY

IF USUALLY WIN (CODE 1 AT l5)
L6A. So how much money do you USUALLY WIN?
Record amount in dollars.

IF USUALLY LOSE (CODE 2 AT l5)
L6B. So how much money do you USUALLY LOSE?
Record amount in dollars.

IF PLAYED GAMES PRIVATELY FOR MONEY (QUESTION SQ2A CODED 10)

L6C. Do you usually set yourself a limit when you play these games?
1   YES
2   NO
3   CAN'T SAY

IF SET SELF LIMIT (CODE 1 ON L6C) ASK:

L7. Do you stick to the limit you set yourself #/never, rarely, sometimes, often or always /always, often, sometimes, rarely or never/?
1   NEVER
2   RARELY
3   SOMETIMES
4   OFTEN
5   ALWAYS
6   CAN'T SAY

IF PLAYED ANY OTHER GAMBLING ACTIVITY (code 96 and not 97 at sq2a, or code 97 at sq2b1 if both 96 and 97 mentioned at sq2a, or code 96 at sq2a if code 98 mentioned at sq2b1).

You mentioned earlier that you play (OTHER GAMBLING ACTIVITIES) ([OpenResponse] #183. #178. #178.), [%SQ2B2A1][%SQ2B2A2][%SQ2B2A3] times per [%SQ2B2A] IN THE LAST 12 MONTHS in the NORTHERN TERRITORY.

M2. For how long do you usually gamble on that activity when you play?
RECORD HOURS HERE AND RETURN TO RECORD MINUTES
IF CAN'T SAY ENCOURAGE BEST GUESS
IF STILL CAN'T SAY ENTER D

IF NOT CAN'T SAY ON M2 ASK:
RECORD MINUTES HERE

M2. (For how long do you usually gamble

on that activity when you play?)
IF CAN'T SAY ENCOURAGE BEST GUESS
IF ANSWER ONLY GIVEN IN HOURS,
ENTER 0 MINUTES

IF PLAYED ANY OTHER GAMBLING ACTIVITY (QUESTION SQ2A CODES 96 OR 97)

M3. How much money do you usually outlay each time you play that activity?
Record amount in dollars.

M4. And how much money do you usually have left when you finish playing that activity?
Record amount in dollars.

IF CAN'T SAY ON M3 OR M4 ASK:
M5. Do you usually lose or win each time you play that activity?

1	USUALLY WIN
2	USUALLY LOSE
3	CAN'T SAY

IF USUALLY WIN (CODE 1 AT m5)
M6A. So how much money do you USUALLY WIN?
Record amount in dollars.

IF USUALLY LOSE (CODE 2 AT m5)
M6B. So how much money do you USUALLY LOSE?
Record amount in dollars.

IF PLAYED ANY OTHER GAMBLING ACTIVITY (QUESTION SQ2A CODES 96 OR 97)

M6C. Do you usually set yourself a limit when you gamble in this way?

1	YES
2	NO
3	CAN'T SAY

IF SET SELF LIMIT (CODE 1 ON M6C) ASK:
M7. Do you stick to the limit you set yourself #/never, rarely, sometimes, often or always /always, often, sometimes, rarely or never/?

1	NEVER
2	RARELY
3	SOMETIMES
4	OFTEN
5	ALWAYS
6	CAN'T SAY

SECTION C: SOGS, CPGI, & PROBLEM GAMBLING
ASK ALL REGULAR GAMBLERS (CODE 1 AT REGULAR)
I am now going to read out some questions about WHAT PEOPLE DO WHEN THEY GAMBLE. As I read out each statement, please tell me WHETHER IT HAS APPLIED TO YOU PERSONALLY IN THE LAST 12 MONTHS. Remember that all the information you provide is ANONYMOUS and CONFIDENTIAL, so I need your HONEST ANSWERS.

SECTION C: PART 1 AND PART 2 WILL ROTATE

SECTION C: PART 1
O1. In the last 12 months, when you gambled, HOW OFTEN DID YOU GO BACK ANOTHER DAY TO WIN BACK MONEY YOU LOST? Would you say never/rarely/sometimes/often or always?

1	NEVER
2	RARELY
3	SOMETIMES
4	OFTEN
5	ALWAYS
6	CAN'T SAY
7	REFUSED

O2. In the last 12 months, HAVE YOU CLAIMED TO BE WINNING MONEY FROM GAMBLING WHEN IN FACT YOU LOST? Would you say #/never/rarely/sometimes/often or always/ always/often/sometimes/rarely or never/?

1	NEVER
2	RARELY
3	SOMETIMES
4	OFTEN
5	ALWAYS
6	CAN'T SAY
7	REFUSED

For the next set of questions, please answer yes or no.
O3a. In the last 12 months, HAVE YOU GAMBLED MORE THAN YOU INTENDED TO?

1	YES
2	NO
3	CAN'T SAY
4	REFUSED

O4a. In the last 12 months, HAVE PEOPLE CRITICISED YOUR GAMBLING OR TOLD YOU THAT YOU HAVE A GAMBLING PROBLEM,

REGARDLESS OF WHETHER OR
NOT YOU THOUGHT IT WAS TRUE?
1   YES
2   NO
3   CAN'T SAY
4   REFUSED

O5a. In the last 12 months, HAVE YOU FELT GUILTY ABOUT THE WAY YOU GAMBLE OR WHAT HAPPENS WHEN YOU GAMBLE?
1   YES
2   NO
3   CAN'T SAY
4   REFUSED

O6a. In the last 12 months, HAVE YOU FELT THAT YOU WOULD LIKE TO STOP GAMBLING, BUT DIDN'T THINK YOU COULD?
1   YES
2   NO
3   CAN'T SAY
4   REFUSED

O7a. In the last 12 months, HAVE YOU HIDDEN BETTING SLIPS, LOTTERY TICKETS, GAMBLING MONEY OR OTHER SIGNS OF GAMBLING FROM YOUR SPOUSE/PARTNER, CHILDREN, OR OTHER IMPORTANT PEOPLE IN YOUR LIFE?
1   YES
2   NO
3   CAN'T SAY
4   REFUSED

O8a. In the last 12 months, HAVE YOU ARGUED WITH PEOPLE YOU LIVE WITH OVER HOW YOU HANDLE MONEY?
1   YES
2   NO
3   CAN'T SAY
4   REFUSED

IF ARGUED (O8A CODE 1)
O8c. Have these money arguments centred on your gambling? Would you say #/never/rarely/sometimes/often or always/ always/often/sometimes/rarely or never/?
1   NEVER
2   RARELY
3   SOMETIMES
4   OFTEN
5   ALWAYS
6   CAN'T SAY

ASK ALL REGULAR GAMBLERS (CODE 1 AT REGULAR)

O9a. In the last 12 months, HAVE YOU BORROWED FROM SOMEONE AND NOT PAID THEM BACK AS A RESULT OF YOUR GAMBLING?
1   YES
2   NO
3   CAN'T SAY
4   REFUSED

O10a. In the last 12 months, HAVE YOU LOST TIME FROM WORK OR STUDY BECAUSE OF YOUR GAMBLING?
1   YES
2   NO
3   CAN'T SAY
4   REFUSED

Next are some ways people have obtained money to gamble or to pay gambling debts. Again, please answer honestly and tell me whether any of the following questions applied to you personally.

O11a. In the last 12 months, HAVE YOU BORROWED FROM HOUSEHOLD MONEY to gamble or to pay gambling debts?
1   YES
2   NO
3   CAN'T SAY
4   REFUSED

O12a. In the last 12 months, HAVE YOU BORROWED FROM YOUR SPOUSE OR PARTNER to gamble or to pay gambling debts?
1   YES
2   NO
3   CAN'T SAY
4   REFUSED

O13a. In the last 12 months, HAVE YOU BORROWED FROM OTHER RELATIVES OR IN-LAWS to gamble or to pay gambling debts?
1   YES
2   NO
3   CAN'T SAY
4   REFUSED

O14a. In the last 12 months, HAVE YOU OBTAINED CASH ADVANCES USING YOUR CREDIT CARDS to gamble or to pay gambling debts? This does not include using cards to make cash withdrawals from savings or cheque accounts.
1   YES
2   NO
3   CAN'T SAY
4   REFUSED

O15a. In the last 12 months, HAVE YOU BORROWED FROM BANKS, FINANCE COMPANIES OR CREDIT UNIONS to gamble or to pay gambling debts?
1   YES
2   NO
3   CAN'T SAY
4   REFUSED

O16a. In the last 12 months, HAVE YOU BORROWED FROM LOAN SHARKS to gamble or to pay gambling debts?
1   YES
2   NO
3   CAN'T SAY
4   REFUSED

O17a. In the last 12 months, HAVE YOU CASHED IN SHARES, BONDS OR OTHER SECURITIES to gamble or to pay gambling debts?
1   YES
2   NO
3   CAN'T SAY
4   REFUSED

O18a. In the last 12 months, HAVE YOU SOLD PERSONAL OR FAMILY PROPERTY to gamble or to pay gambling debts?
1   YES
2   NO
3   CAN'T SAY
4   REFUSED

O19a. In the last 12 months, HAVE YOU WRITTEN A CHEQUE KNOWING THERE WAS NO MONEY IN YOUR ACCOUNT, to gamble or to pay gambling debts?
1   YES
2   NO
3   CAN'T SAY
4   REFUSED

O21. Do you feel you have had a problem with your gambling?
Would you say, yes, in the past but not now; yes, I feel this way now; or no?
1   YES, IN THE PAST BUT NOT
      NOW
2   YES, I FEEL THIS WAY NOW
3   NO I HAVEN'T
4   CAN'T SAY
5   REFUSED

IF HAD PROBLEM IN PAST (CODE 1 AT O21)
O22. And for how long did you have a problem with your gambling?

ENTER NUMBER OF YEARS
IF CAN'T SAY ENCOURAGE BEST GUESS
ROUND TO NEAREST YEAR - IF LESS
THAN 6 MONTHS ENTER 0
IF STILL CAN'T SAY ENTER D

IF HAS PROBLEM NOW (CODE 2 AT O21)
O23. So for how long do you feel you have had a problem with your gambling?
ENTER NUMBER OF YEARS
IF CAN'T SAY ENCOURAGE BEST GUESS
ROUND TO NEAREST YEAR - IF LESS
THAN 6 MONTHS ENTER 0
IF STILL CAN'T SAY ENTER D

SECTION C: PART TWO
CPG1. In the last 12 months, how often have you bet more than you could really afford to lose? Would you say never, sometimes, most of the time, or almost always?
1   NEVER
2   SOMETIMES
3   MOST OF THE TIME
4   ALMOST ALWAYS
5   CAN'T SAY
6   REFUSED

CPG2. In the last 12 months, how often have you needed to gamble with larger amounts of money to get the same feeling of excitement? Would you say never, sometimes, most of the time, or almost always?
1   NEVER
2   SOMETIMES
3   MOST OF THE TIME
4   ALMOST ALWAYS
5   CAN'T SAY
6   REFUSED

CPG3. In the last 12 months, when you gambled, how often did you go back another day to try to win back the money you lost? Would you say never, sometimes, most of the time, or almost always?
1   NEVER
2   SOMETIMES
3   MOST OF THE TIME
4   ALMOST ALWAYS
5   CAN'T SAY
6   REFUSED

CPG4. In the last 12 months, how often have you borrowed money or sold anything to get money to gamble? Would you say never, sometimes, most of the time, or almost always?
1   NEVER

2 SOMETIMES
3 MOST OF THE TIME
4 ALMOST ALWAYS
5 CAN'T SAY
6 REFUSED

CPG5. In the last 12 months, how often have you felt that you might have a problem with gambling? Would you say never, sometimes, most of the time, or almost always?
1 NEVER
2 SOMETIMES
3 MOST OF THE TIME
4 ALMOST ALWAYS
5 CAN'T SAY
6 REFUSED

CPG6. In the last 12 months, how often has gambling caused you any health problems, including stress or anxiety? Would you say never, sometimes, most of the time, or almost always?
1 NEVER
2 SOMETIMES
3 MOST OF THE TIME
4 ALMOST ALWAYS
5 CAN'T SAY
6 REFUSED

CPG7. In the last 12 months, how often have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true? Would you say never, sometimes, most of the time, or almost always?
1 NEVER
2 SOMETIMES
3 MOST OF THE TIME
4 ALMOST ALWAYS
5 CAN'T SAY
6 REFUSED

CPG8. In the last 12 months, how often has your gambling caused any financial problems for you or your household? Would you say never, sometimes, most of the time, or almost always?
1 NEVER
2 SOMETIMES
3 MOST OF THE TIME
4 ALMOST ALWAYS
5 CAN'T SAY
6 REFUSED

CPG9. In the last 12 months, how often have you felt guilty about the way you gamble or what happens when you gamble? Would you say never, sometimes, most of the time, or almost always?
1 NEVER

2 SOMETIMES
3 MOST OF THE TIME
4 ALMOST ALWAYS
5 CAN'T SAY
6 REFUSED

SECTION D: DEMOGRAPHICS

ASK EVERYONE

Finally, I need to ask some general questions about you and your household to make sure we have a reasonable coverage of the population.

QD1. Do you consider your current principal place of residence to be the Northern Territory?
1 YES
2 NO
3 CAN'T SAY

IF CONSIDER NT PLACE OF RESIDENCE (CODE 1 ON QD1) ASK:
QD1A. How long have you lived in the NT?
READ OUT
1 Less than 6 months
2 6 months to less than 1 year
3 1 year to less than 2 years
4 2 years to less than 3 years
5 3 years to less than 5 years
6 5 years to less than 10 years
7 10 years or more
8 CANT SAY

IF DON'T CONSIDER NT PLACE OF RESIDENCE (CODES 2 OR 3 ON QD1) ASK:
QD1b. Where is your principal place of residence?
1 NSW
2 VIC
3 QLD
4 WA
5 SA
6 TAS
7 ACT
8 UNITED KINGDOM
9 NEW ZEALAND
10 USA
11 CANADA
12 GREECE
13 ITALY
14 OTHER EUROPE
15 LEBANON
16 CHINA
17 INDIA
18 VIETNAM
19 MALAYSIA
20 PHILIPPINES

21	HONG KONG
22	SOUTH AFRICA
97	OTHER (PLEASE SPECIFY)
98	CAN'T SAY

ASK EVERYONE
QD2. In what country were you born?

1	AUSTRALIA
2	UNITED KINGDOM
3	NEW ZEALAND
4	PHILIPPINES
5	UNITED STATES OF AMERICA
6	GREECE
7	GERMANY
8	INDONESIA
9	MALAYSIA
10	VIET NAM
11	NETHERLANDS
12	ITALY
13	INDIA
14	CHINA
15	IRELAND
16	SOUTH AFRICA
17	SRI LANKA
18	CANADA
19	HONG KONG
20	SINGAPORE
21	FRANCE
22	FIJI
23	POLAND
24	FEDERAL REPUBLIC OF YUGOSLAVIA
25	REPUBLIC OF SOUTH KOREA
26	CROATIA
27	EGYPT
28	MALTA
29	TURKEY
30	MACEDONIA
31	LEBANON
97	OTHER (SPECIFY)
98	DON'T KNOW

QD3. Was your mother born in Australia?

1	YES
2	NO
3	REFUSED

QD4. Was your father born in Australia?

1	YES
2	NO
3	REFUSED

QD5. Are you of Aboriginal or Torres Strait Islander descent?

1	YES
2	NO
3	REFUSED

QD6A. Is English the main language spoken in your household?

| 1 | YES |

| 2 | NO |

IF ENGLISH NOT MAIN HOUSEHOLD LANGUAGE (CODE 2 AT QD6A)

QD6B. What is the main language spoken in your household?

1	ABORIGINAL
2	AFGHANI (PUSHTU)
3	ALBANIAN
4	AMHARIC
5	ARABIC (INCLUDING LEBANESE)
6	ARMENIAN
7	ASSYRIAN
8	BENGALI
9	BOSNIAN
10	BULGARIAN
11	BURMESE
12	CANTONESE
13	CHINESE (OTHER)
14	CROATIAN
15	ESTONIAN
16	FIJIAN
17	FINNISH
18	FRENCH
19	GERMAN
20	GREEK
21	HAKKA
22	HINDI
23	HUNGARIAN
24	INDONESIAN
25	ITALIAN
26	JAPANESE
27	KHMER (KAMPUCHEAN)
28	KOREAN
29	LAO
30	MACEDONIAN
31	MALAYALAM
32	MALTESE
33	MANDARIN
34	NORWEGIAN
35	OTH INDIAN/ PAKISTANI
36	PERSIAN (FARSI)
37	POLISH
38	PORTUGESE
39	PUNJABI
40	ROMANIAN
41	RUSSIAN
42	SAMOAN
43	SERBIAN
44	SIGN LANGUAGE
45	SINHALESE (SRI LANKAN)
46	SLOVAK
47	SLOVENE
48	SPANISH
49	TAGALOG
50	TAMIL
51	TETUM (TIMORESE)
52	THAI

53	TONGAN
54	TURKISH
55	UKRANIAN
56	URDU
57	VIETNAMESE
97	OTHER (SPECIFY)
98	CAN'T SAY

ASK EVERYONE

QD7. What is your current marital status?
1   Married or living with a partner
2   Separated or divorced
3   Widowed
4   Single
5   REFUSED

QD8. Which of the following best describes your household?
1   Single person
2   One parent family with children
3   Couple with children
4   Couple with no children
5   Group household
6   Other
7   CAN'T SAY

QD9. How many people in total, including children, usually live in your household?
Record number of people.

IF CHILDREN IN HOUSEHOLD (CODES 2, 3, 5 OR 6 AT QD8)
QD10. How many children under 15 years of age usually live in your household?
Record number of children.

ASK EVERYONE
QD11. Which of the following best describes your current work status?
1   Working Full-time
2   Working Part-time
3   Home Duties
4   Student
5   Retired (Self-supporting, In Receipt Of Superannuation)
6   Pensioner
7   Unemployed Or Looking For Work
8   Other
9   CAN'T SAY

IF WORKING (CODES 1 OR 2 ON QD11) ASK:
QD12. What is YOUR CURRENT occupation?
1: Professional
2: Owner or Executive
3: Owner of Small Businesses
4: Other White Collar

5: Skilled
6: Semi-Skilled
7: Unskilled
8: Farm Owner
9: Farm Worker
10: No Occupation
11: Sales
12: Semi-Professional

QD13. What is the main source of income in your household?
1   Wages/salary
2   Own business
3   Other private income
4   Unemployment benefit
5   Retirement benefit
6   Sickness benefit
7   Supporting parent benefit
8   Aged pension
9   Invalid pension
10   Other
11   DON'T KNOW

DQ16. What is the highest level of education you have reached?
1   Some Primary School
2   Finished Primary School
3   Some Secondary School
4   Some Tech. or Commercial
5   Intermediate/Form 4/Year 10
6   5th Form/Leaving/Year 11
7   Finish Tech or Cmmrcl College
8   Finish/ Now Doing Matric/HSC/Year
12
9   Some University Training
10   Now at University
11   Tertiary Diploma, Not Uni
12   Degree
97   Other (SPECIFY)
98   CAN'T SAY
99   REFUSED

QD14. Could you please tell me your own annual income from all sources BEFORE TAX?
1   < $10,000
2    $10,000 - $14,999
3    $15,000 - $19,999
4    $20,000 - $24,999
5    $25,000 - $29,999
6    $30,000 - $34,999
7    $35,000 - $39,999
8    $40,000 - $49,999
9    $50,000 - $59,999
10    $60,000 - $69,999
11    $70,000 - $79,999
12    $80,000 - $89,999
13    $90,000 - $99,999
14    $100,000 - $124,999
15    $125,000 or more
16   DON'T KNOW

IF NOT SINGLE PERSON (CODES 2 TO 7 ON QD8) ASK:

DQ15. Could you please tell me your total annual household income from all sources BEFORE TAX?

Include income from ALL HOUSEHOLD MEMBERS.

1	< $10,000
2	$10,000 - $14,999
3	$15,000 - $19,999
4	$20,000 - $24,999
5	$25,000 - $29,999
6	$30,000 - $34,999
7	$35,000 - $39,999
8	$40,000 - $49,999
9	$50,000 - $59,999
10	$60,000 - $69,999
11	$70,000 - $79,999
12	$80,000 - $89,999
13	$90,000 - $99,999
14	$100,000 - $124,999
15	$125,000 or more
16	DON'T KNOW

Thank you for your time and assistance. This market research is carried out in compliance with the Privacy Act, and the information you provided will be used only for research purposes. We are conducting this research on behalf of CHARLES DARWIN UNIVERSITY.

If you would like any more information about this project or Roy Morgan Research, you can phone us on 1800 337 332

TO BE COMPLETED BY THE INTERVIEWER: PLEASE RATE THE LEVEL OF THE RESPONDENT'S COOPERATION WITH THE SURVEY.

HOW WILLING WAS THE RESPONDENT TO BE INTERVIEWED?

1	HIGH
2	MEDIUM
3	LOW

TO BE COMPLETED BY THE INTERVIEWER: PLEASE CODE THE QUALITY OF THE COMMUNICATION WITH THE RESPONDENT (HOW WELL DID THE RESPONDENT APPEAR TO UNDERSTAND THE QUESTIONS)?

1	HIGH
2	MEDIUM
3	LOW

This completes the survey.
For more information about the survey you can contact [name and telephone number supplied].

END-OF-QUESTIONNAIRE

Appendix G: Supporting Tables

All lower and upper bounds reported in this section reflect the point estimate, plus/minus its standard error, unless otherwise stated. The standard error of the point estimate represents the upper and lower bounds for which it can be said that there is a 67% probability that the true estimate lies within this region. The following formulas can be used to calculate the point estimate, its standard error, and its 95% confidence interval (if more certainty for upper and lower bounds is required).

Point estimate = $Lower$ + SE

Standard Error of estimate (SE) = $\dfrac{Upper - Lower}{2}$

95% confidence interval for the point estimate (95% CI) = $1.96 \times$ SE

Chapter 2: Gambling Prevalence

Table for Figure 2.1: Percentage of NT adult population engaging in gambling by activity (N=138,225)

Gambling activity	Lower – Upper Bounds (%)
Played lotto or other lottery game	51.1 - 54.4
Bought instant scratch tickets	27.0 - 30.2
Played poker or gaming machines	25.5 - 28.5
Played keno at club/hotel/casino/other	21.2 - 23.9
Bet on horse or greyhound races	17.7 - 20.3
Played table games at casino	9.1 - 11.5
Bet on a sporting event	4.6 - 5.9
Played games like cards privately for money	3.1 - 4.2
Played bingo at a club or hall	1.3 - 2.5
Played any other gambling activity	0.7 - 1.4
Played an internet casino game	0.4 - 0.8
At least one gambling activity	71.7 - 74.4

Table for Figure 2.2: Percentage of adult population engaging in any gambling activity in each of five regions in the NT (N = 138,225)

Gambling activity	Darwin (N=70,406) Lower – Upper Bounds (%)	Alice Springs (N=16,071) Lower – Upper Bounds (%)	Katherine (N=38,879) Lower – Upper Bounds (%)	Tennant Creek/ Nhulunbuy (N=6,652) Lower – Upper Bounds (%)	Rest NT (N=6,217) Lower – Upper Bounds (%)
At least one gambling activity	76.1 - 78.7	67.8 - 73.7	68.2 - 75.8	76.8 - 83.3	61.2 – 69.0
Two or more gambling activities	50.0 - 53.7	41.5 - 48.9	37.8 - 47.1	50.9 - 61.7	35.3 - 44.4

Table for Figure 2.3: Percentage of adult population engaging in gambling by activity in each of five regions in the NT (N = 138,225)

Gambling activity	Darwin (N=70,406) Lower – Upper Bounds (%)	Alice Springs (N=16,071) Lower – Upper Bounds (%)	Katherine (N=38,879) Lower – Upper Bounds (%)	Tennant Creek/ Nhulunbuy (N=6,652) Lower – Upper Bounds (%)	Rest NT (N=6,217) Lower – Upper Bounds (%)
Played lotto or other lottery game	58.1 - 61.7	47.6 - 54.8	54.4 - 63.4	48.6 - 61.3	34.8 - 43.4
Bought instant scratch tickets	26.6 - 30.0	29.5 - 36.9	19.1 - 26.4	24.2 - 34.9	23.6 - 32.5
Played poker or gaming machines	28.1 - 31.5	25.9 - 32.6	21.4 - 29.7	25.8 - 37.8	16.5 - 24.3
Played keno at club/hotel/casino/other	23.6 - 26.9	10.8 - 15.6	14.3 - 21.2	21.8 - 34.7	17.9 - 25.0
Bet on horse or greyhound races	19.5 - 22.6	10.4 - 14.9	15.7 - 23.6	17.9 - 27.1	14.0 - 20.9
Played table games at casino	8.3 - 10.6	12.4 - 18.1	2.2 - 5.2	1.9 - 4.2	8.5 - 15.6
Bet on a sporting event	5.0 - 7.0	3.3 - 5.8	3.2 - 6.6	4.5 - 9.7	2.8 - 5.1
Played games privately for money	2.9 - 4.5	2.3 - 5.0	2.1 - 6.0	2.5 - 7.0	2.2 - 4.4
Played bingo at a club or hall	0.8 - 1.5	0.6 - 1.2	1.6 - 3.8	1.7 - 4.9	1.4 - 5.1
Played any other gambling activity	0.5 - 1.5	0.0 - 0.2	0.3 - 3.6	0.1 - 6.1	0.2 - 1.9
Played internet casino games	0.5 - 1.1	1.0 - 2.5	0	0	0
At least one gambling activity	76.1 - 78.7	67.8 - 73.7	68.2 - 75.8	76.8 - 83.3	61.2 – 69.0

Table for Figure 2.4: Percentage frequency of gambling activity for NT adults participating in a gambling activity

Gambling activity	4+ times per week Lower – Upper Bounds (%)	1-3 times per week Lower – Upper Bounds (%)	1-3 times per month Lower – Upper Bounds (%)	<1 time per month Lower – Upper Bounds (%)
Played lotto or other lottery game (N=72,915)	0.62 - 1.35	30.5 - 34.1	25.1 - 29.2	37.3 - 41.8
Bought instant scratch tickets (N=39,518)	0.02 - 0.17	6.6 - 9.3	25.1 - 30.5	61.4 - 67.0
Played poker or gaming machines (N=37,307)	0.13 - 0.37	7.8 - 9.8	21.8 - 27.5	63.3 - 69.3
Played keno at club/hotel/casino/other (N=31,178)	0.67 - 1.46	7.9 - 10.4	18.9 - 23.8	65.6 - 71.2
Bet on horse or greyhound races (N=26,323)	0.58 - 1.43	6.2 - 9.0	13.0 - 17.5	73.8 - 78.6
Played table games at casino (N=14,211)	0.00 - 0.33	1.0 - 2.4	10.4 - 16.1	82.1 - 87.7
Bet on a sporting event (N=7,243)	0.13 - 1.11	14.2 - 19.8	13.5 - 21.9	59.6 - 69.8
Played games privately for money (N=5,046)	2.22 - 2.64	6.7 - 12.3	14.3 - 27.4	60.1 - 74.2
Played bingo at a club or hall (N=2,623)	0	17.3 - 25.6	11.1 - 18.0	58.5 - 69.5
Played any other gambling activity (N=1,475)	0	0.7 - 3.9	28.0 - 31.3	65.4 - 70.7
Played internet casino games (N=820)	22.7 - 22.9	18.3 - 18.5	0	57.8 - 58.9

Table for Figure 2.5: Percentage of NT adults who gambled by activity for males (N=71,415) and females (N=66,810) gamblers

Gambling activity	Males (N=71,415) Lower – Upper Bounds (%)	Females (N=66,810) Lower – Upper Bounds (%)
Played lotto or other lottery game	48.6 - 53.4	52.5 - 56.8
Bought instant scratch tickets	22.7 - 27.4	30.2 - 34.5
Played poker or gaming machines	24.8 - 29.5	25.0 - 28.6
Played keno at club/hotel/casino/other	22.0 - 26.2	19.1 - 22.7
Bet on horse or greyhound races	19.3 - 23.5	15.1 - 18.0
Played table games at casino	13.8 - 18.1	3.4 - 5.0
Bet on a sporting event	6.9 - 9.2	1.7 - 2.8
Played games like cards privately for money	3.2 - 4.6	2.5 - 4.2
Played bingo at a club or hall	0.3 - 2.2	2.1 - 3.2
Played any other gambling activity	1.0 - 2.3	0.2 - 0.8
Played internet casino games	0.6 - 1.2	0.1 - 0.4

Table for Figure 2.6: Percentage of NT adults who gambled by activity for age groups

Gambling activity	18-24 yrs (N=20,163) Lower – Upper Bounds (%)	25-34 yrs (N=33,296) Lower – Upper Bounds (%)	35-44 yrs (N=29,538) Lower – Upper Bounds (%)	45-54 yrs (N=31,264) Lower – Upper Bounds (%)	55+ yrs (N=23,963) Lower – Upper Bounds (%)
Played lotto or other lottery game	24.8 - 35.4	44.2 - 51.9	53.9 - 59.4	60.1 - 65.6	57.1 - 63.6
Bought instant scratch tickets	29.5 - 42.4	24.7 - 31.6	24.6 - 29.8	26.5 - 32.2	20.9 - 26.6
Played poker or gaming machines	27.6 - 38.1	25 - 32.2	21.9 - 27	26.9 - 32.5	17.1 - 21.8
Played keno at club/hotel/casino/other	16.2 - 24.7	22.2 - 29.4	22.5 - 27.6	19 - 23.6	16 - 21
Bet on horse or greyhound races	11.8 - 18.3	19.4 - 26.8	17.8 - 22.2	17.7 - 22.3	12.1 - 16.6
Played table games at casino	13.2 - 23.3	12.1 - 18.7	6.7 - 9.8	5.8 - 8.8	1.8 - 3.9
Bet on a sporting event	4.4 - 9.6	4.7 - 7.1	3.5 - 5.7	4.1 - 6.6	2.4 - 4.6
Played games privately for money	4.9 - 9.3	2.9 - 5.1	3.2 - 5.9	1.5 - 3	0.4 - 1.7
Played bingo at a club or hall	0.3 - 1.7	1 - 5.2	1.3 - 2.6	0.5 - 1.5	1.5 - 2.7
Played any other gambling activity	1.1 - 4.5	0.1 - 0.9	0.1 - 0.8	0.1 - 0.8	0.5 - 3.2
Played internet casino games	1.1 - 3.2	0.5 - 1.1	0.2 - 0.6	0 - 0.1	0

Table for Figure 2.7: Percentage of NT adults who gambled by activity for regular and non-regular gamblers

Gambling activity	Regular gambler (N=10,359) Lower – Upper Bounds (%)	Non-regular gambler (N=90,583) Lower – Upper Bounds (%)
Played lotto or other lottery game	72.8 - 78.6	69.6 - 74.0
Bought instant scratch tickets	41.3 - 47.9	36.3 - 40.7
Played poker or gaming machines	66.6 - 73.3	31.1 - 35.3
Played keno at club/hotel/casino/other	70.0 - 75.8	24.1 - 28.0
Bet on horse or greyhound races	52.7 - 59.1	20.8 - 24.5
Played table games at casino	26.1 - 32.0	10.6 - 14.2
Bet on a sporting event	22.8 - 28.6	4.2 - 5.9
Played games like cards privately for money	15.0 - 20.4	2.8 - 4.3
Played bingo at a club or hall	7.3 - 10.5	1.0 - 2.7
Played any other gambling activity	1.4 - 3.8	0.8 - 1.9
Played internet casino games	2.9 - 5.4	0.2 - 0.7

Chapter 3: Problem Gambling

Table for Figure 3.1 and 3.2: Prevalence rates of SOGS classified problems gamblers, regular non-problem gamblers, and non-regular gamblers in the NT

	SOGS problem gambler	Regular non-problem gambler	Non-regular gambler	Non-gambler	Total number of people (N)
	Lower – Upper Bounds (%)	Lower – Upper Bounds (%)	Lower – Upper Bounds (%)	Lower – Upper Bounds (%)	
Darwin	0.85 - 1.25	5.8 - 6.9	68.5 - 71.5	21.3 - 23.9	70,406
Alice Springs	0.95 - 2.21	5.3 - 7.7	59.4 - 66.0	26.3 - 32.2	16,071
Katherine	0.18 - 1.11	8.3 - 12.1	57.0 - 65.5	24.2 - 31.8	6,652
Tennant Creek/ Nhulunbuy	0.08 - 0.64	8.2 - 14.1	63.8 - 73.3	16.7 - 23.2	6,217
Rest of NT	0.62 - 1.56	3.9 - 6.3	54.7 - 63.0	31.0 - 38.8	38,879
NT	**0.89 - 1.25**	**5.9 - 6.9**	**64.1 - 67.0**	**25.6 - 28.3**	**138,225**

Table for Figure 3.3: Gambling activities engaged in by SOGS problem gamblers, regular gamblers and non-regular gamblers

Gambling activity	SOGS problem gambler (N=1,478)	Regular non-problem gambler (N=8,881)	Non-regular Gambler (N=90,583)	All gamblers (N=100,942)
	Lower – Upper Bounds (%)	Lower – Upper Bounds (%)	Lower – Upper Bounds (%)	Lower – Upper Bounds (%)
Played lotto or other lottery game	43.0 - 60.3	76.9 - 82.5	69.7 - 74.0	70.3 - 74.2
Bought instant scratch tickets	31.7 - 47.3	41.8 - 49.0	36.3 - 40.7	37.1 - 41.2
Played poker or gaming machines	80.6 - 96.2	63.2 - 70.6	31.0 - 35.3	35.0 - 38.9
Played keno at club/hotel/casino/other	52.3 - 70.3	71.9 - 77.8	24.1 - 28.1	29.0 - 32.7
Bet on horse or greyhound races	34.0 - 50.4	54.8 - 61.5	20.8 - 24.5	24.3 - 27.8
Played table games at casino	22.0 - 36.8	25.7 - 32.3	10.6 - 14.2	12.5 - 15.7
Bet on a sporting event	11.1 - 23.9	23.9 - 30.3	4.2 - 5.9	6.3 - 8.0
Played games privately for money	18.3 - 36.8	13.4 - 18.7	2.8 - 4.3	4.3 - 5.7
Played bingo at a club or hall	3.1 - 10.2	7.5 - 11.1	1.0 - 2.7	1.8 - 3.4
Played other gambling activity	0	1.6 - 4.4	0.8 - 1.9	0.9 - 2.0
Played an internet casino game	0.1 - 8.6	2.8 - 5.4	0.2 - 0.7	0.6 - 1.1

Table for Figure 3.4: Figure 3.5 Gambling activities engaged in by SOGS problem gamblers for males (N=715) and females (N=763)

Gambling activity	Males (N=715) Lower – Upper Bounds (%)	Females (N=763) Lower – Upper Bounds (%)	Persons (N=1,478) Lower – Upper Bounds (%)
Played lotto or other lottery game	31.0 - 53.1	58.5 - 75.7	43.6 - 59.6
Bought instant scratch tickets	17.8 - 38.2	51.8 - 64.6	32.1 - 46.9
Played poker or gaming machines	71.4 - 96.3	91.7 - 100.0	80.3 - 96.5
Played keno at club/hotel/casino/other	44.9 - 69.1	62.4 - 74.3	53.3 - 69.4
Bet on horse or greyhound races	33.3 - 58.1	26.2 - 46.9	33.7 - 50.7
Played table games at casino	23.3 - 36.0	19.0 - 39.2	23.9 - 34.9
Bet on a sporting event	16.3 - 31.6	0.0 - 14.0	12.1 - 22.9
Played games privately for money	13.1 - 37.5	22.5 - 39.9	19.4 - 35.7
Played bingo at a club or hall	1.4 - 9.3	1.6 - 16.1	3.0 - 10.4
Played other gambling activity	0	0	0
Played an internet casino game	6.4 - 7.7	0	4.1 - 4.6

Table for Figure 3.5: Gambling activities engaged in by SOGS problem gamblers for age groups

Gambling activity	18-24 yrs (N=147) Lower – Upper Bounds (%)	25-34 yrs (N=266) Lower – Upper Bounds (%)	35-44 yrs (N=283) Lower – Upper Bounds (%)	45-54 yrs (N=382) Lower – Upper Bounds (%)	55+ yrs (N=400) Lower – Upper Bounds (%)
Played lotto or other lottery game	4.3 - 5.3	18.3 - 31.7	42.3 - 80.2	57.2 - 80.8	38.1 - 87.9
Bought instant scratch tickets	4.3 - 5.3	2.6 - 17.2	40.6 - 77.1	33.5 - 59.3	27.8 - 75.4
Played poker or gaming machines	100.0	100.0	83.7 - 99.7	86.8 - 99.9	44.0 - 94.7
Played keno at club/hotel/casino/other	8.9 - 66.3	59.6 - 62.6	49.1 - 85.5	70.7 - 90.6	25.3 - 69.9
Bet on horse or greyhound races	3.6 - 62.0	42.7 - 53.2	17.0 - 50.5	41.1 - 67.6	14.5 - 57.7
Played table games at casino	36.1 - 44.9	43.3 - 59.1	37.6 - 71.5	0.5 - 18.0	3.1 - 21.8
Bet on a sporting event	8.9 - 66.3	24.1 - 36.3	13.5 - 45.7	0	0.7 - 18.9
Played games privately for money	0.0 - 46.1	34.2 - 37.0	30.0 - 53.6	0	16.2 - 64.7
Played bingo at a club or hall	0	0.0 - 7.9	4.0 - 30.6	0	0.7 - 18.9
Played other gambling activity	0	0	0	0	0
Played an internet casino game	0	23.3 - 25.2	0	0	0

Table for figure 3.6: Distribution of SOGS scores for regular gamblers (n=369)

SOGS score	Regular gamblers Lower – Upper Bounds SE (%)	Cumulative %	Unweighted Count
0	32.24 - 38.76	35.5	133
1	21.51 - 27.69	60.1	89
2	8.79 - 12.61	70.8	41
3	6.72 - 10.08	79.2	30
4	4.37 - 8.23	85.4	20
5	1.18 - 2.82	87.4	7
6	2.53 - 5.47	91.4	13
7	3.09 - 5.91	95.9	13
8	0.20 - 0.80	96.4	3
9	0.22 - 0.78	96.9	4
10	0.41 - 1.79	98.0	4
11	0.18 - 0.82	98.6	3
12	0.21 - 1.19	99.2	2
13	0.04 - 0.36	99.4	1
14	0.00 - 0.22	99.5	1
15	0.12 - 0.68	99.9	2
16	0	99.9	0
17	0	99.9	0
18	0.00 - 0.22	100.0	1
Total	**100.0**		**369**

Table for figure 3.7: Distribution of CPGI scores for regular gamblers (n=369)

CPGI score	Regular gamblers Lower – Upper Bounds SE (%)	Cumulative %	Unweighted Count
0	39.27 - 46.18	44.44	164
1	13.47 - 18.14	59.35	55
2	9.40 - 13.57	71.27	44
3	6.05 - 11.18	78.59	27
4	4.07 - 6.68	84.28	21
5	0.88 - 2.20	85.91	6
6	1.96 - 3.65	87.80	7
7	1.60 - 4.35	89.70	7
8	1.13 - 2.65	91.60	7
9	0.70 - 1.79	93.22	6
10	0.28 - 1.38	94.04	3
11	0.54 - 1.89	95.39	5
12	0.10 - 0.89	95.93	2
13	0	95.93	0
14	0.28 - 1.56	96.75	3
15	0.00 - 0.32	97.02	1
16	0.30 - 0.98	98.10	4
17	0.00 - 0.32	98.37	1
18	0	98.37	0
19	0	98.37	0
20	0.00 - 0.63	98.64	1
21	0.00 - 0.28	98.92	1
22	0	98.92	0
23	0.22 - 0.91	99.73	3
24	0	99.73	0
25	0.00 - 0.23	100.00	1
Total	**100.0**		**369**

Chapter 6: Community Attitudes Towards Gambling

Table for Figure 6.1: Percentage of gambler type and their level of agreement with the statement 'that gambling does more good than harm for the local community'

	Regular gamblers (N=10,359)	Non-regular gamblers (N=90,583)	Non-gamblers (N=37,283)	Northern Territory (N=138,225)
	Lower – upper bound (%)	Lower – upper bound (%)	Lower – upper bound (%)	Lower – upper bound (%)
Strongly Agree	4.8 - 7.5	4.7 - 6.7	4.6 - 7.7	5.1 - 6.7
Slightly Agree	16.1 - 22.0	8.2 - 10.7	5.0 - 7.8	8.4 - 10.3
Neither Agree Nor Disagree	14.5 - 20.0	10.6 - 13.3	6.5 - 8.9	10.3 - 12.2
Slightly Disagree	21.0 - 26.3	20.5 - 24.3	18.4 - 23.5	20.7 - 23.6
Strongly Disagree	28.8 - 35.0	46.4 - 50.8	54.3 - 59.8	47.9 - 51.3
Don't Know/ Can't Say	1.1 - 2.7	1.2 - 2.6	1.2 - 2.3	1.4 - 2.3
Total	**100.0**	**100.0**	**100.0**	**100.0**

Table for Figure 6.2: Percentage of gambler type and their level of agreement with the statement 'that gambling does more good than harm for the local community ', for Australia, 1999

- See Productivity Commission 1999, 10.24

Table for Figure 6.3: Percentage of gambler type and their level of agreement with the statement 'that gambling does more good than harm for the local community ', for 1999 and 2005 NT

- See Productivity Commission 1999, 10.24 and Table for Figure 6.1

Table for Figure 6.4: Percentage of gambler type and their agreement with the question 'do you think the number of poker machines currently available in your community should increase, decrease or stay the same? '

	Regular gamblers (N=10,359)	Non-regular gamblers (N=90,583)	Non-gamblers (N=37,283)	Northern Territory (N=138,225)
	Lower – upper bound (%)	Lower – upper bound (%)	Lower – upper bound (%)	Lower – upper bound (%)
A Large Increase	1.9 - 4.3	0.1 - 0.5	0.0 - 0.1	0.3 - 0.6
A Small Increase	2.6 - 5.2	0.5 - 1.3	0.6 - 2.5	0.9 - 1.7
Stay The Same	46 - 52.8	47.3 - 51.8	29.3 - 34.2	43.0 - 46.4
A Small Decrease	11.5 - 17.3	11.6 - 14.7	7.7 - 10.8	11.1 - 13.3
A Large Decrease	23.8 - 29.6	28.3 - 32.0	40.4 - 45.5	31.9 - 34.8
Have No Opinion/ Can't Say	1.2 - 3.8	4.9 - 7.1	12.1 - 16.8	7.0 - 9.0
Total	**100.0**	**100.0**	**100.0**	**100.0**

Table for Figure 6.5: Percentage of Region and their agreement with the question 'do you think the number of poker machines currently available in your community should increase, decrease or stay the same? '

	Darwin (N=70,299)	Alice Springs (N=16,071)	Katherine (N=6,652)	Tennant Ck/ Nhulunbuy (N=6,217)	Rest NT (N=38,879)	Northern Territory (N=138,118)
	Lower – upper bound (%)	Lower – upper bound (%)	Lower – upper bound (%)	Lower – upper bound (%)	Lower – upper bound (%)	Lower – upper bound (%)
A large increase	0.2 - 0.7	0.7 - 2.7	0	0	0.0 - 0.5	0.3 - 0.6
A small increase	0.3 - 0.9	0.0 - 0.2	2.2 - 4.7	0.0 - 0.7	0.1 - 0.5	0.9 - 1.7
Stay the same	40.6 - 44.4	40.3 - 47.7	44.3 - 53.3	39.9 - 49.3	40.5 - 52.5	43.0 - 46.4
A small decrease	11.9 - 14.4	9.6 - 15.0	7.4 - 13.3	8.2 - 13.4	10.1 - 17.9	11.1 - 13.3
A large decrease	35.0 - 38.5	32.4 - 39.1	22 - 28.9	30.4 - 39.6	30.8 - 40.7	31.9 - 34.8
Have no opinion/can't say	5.7 - 7.4	4.5 - 7.8	9.0 - 14.9	6.4 - 12.1	1.6 - 4.8	7.0 - 9.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Table for Figure 6.6: Percentage of gambler type and their perception of the benefits of poker machines

Type of benefit	Regular gamblers (N=10,359)	Non-regular gamblers (N=90,583)	Non-gamblers (N=37,283)	Total (N=138,225)
	Lower – upper bound (%)	Lower – upper bound (%)	Lower – upper bound (%)	Lower – upper bound (%)
None/ no benefits	19.6 - 25.1	25.4 - 29.3	38.4 - 43.8	29.2 - 32.2
Increases revenue and clientele for venues/clubs/industry	18.7 - 24.3	16.8 - 20.8	8.9 - 11.6	15.3 - 18.1
Entertainment/relaxation/recreational value	16.0 - 20.8	14.4 - 17.8	10.7 - 14.6	14.1 - 16.6
Increases government revenue through tax collected	14.9 - 20.0	16.6 - 19.9	14.2 - 17.5	16.4 - 18.7
Money goes back into the local communities	11.2 - 14.9	11.9 - 14.5	5.4 - 7.5	10.5 - 12.3
Increases revenue/ A fundraising mechanism (Unspec.)	4.5 - 7.4	8.0 - 11.0	5.3 - 7.5	7.3 - 9.4
Creates employment opportunities	2.3 - 4.6	1.3 - 2.2	1.7 - 3.2	1.7 - 2.4
Promotes/increases tourism	0.7 - 4.9	2.2 - 3.5	1.9 - 3.3	2.3 - 3.3
Some of the profits will go to charity	0.6 - 1.8	1.2 - 2.7	0.3 - 1.8	1.1 - 2.1

Table for Figure 6.7: Percentage of gambler type and their perception of the drawbacks of poker machines

Type of drawback	Regular gamblers (N=10,359)	Non-regular gamblers (N=90,583)	Non-gamblers (N=37,283)	Total (N=138,225)
	Lower – upper bound (%)	Lower – upper bound (%)	Lower – upper bound (%)	Lower – upper bound (%)
Encourages people to spend money/pushes people & families into debt	35.9 - 42.5	40.6 - 45.1	41.5 - 46.9	41.3 - 44.6
People become addicted	28.5 - 35.1	33.1 - 37.4	28.4 - 33.2	32.2 - 35.4
Causes family issues e.g. time spent away from family/kids going without food or clothing	5.6 - 9.4	11.2 - 14.5	10.6 - 13.9	11.1 - 13.5
Low income earners spending most of their money	5.1 - 7.5	7.3 - 9.5	8.7 - 12.0	7.9 - 9.6
It's an unsociable activity	4.4 - 7.2	3.5 - 5.0	5.5 - 8.1	4.5 - 5.6
Family breakdowns/domestic violence	4.2 - 7.3	8.1 - 10.5	9.8 - 13.1	8.7 - 10.5
Too easily available/accessible	4.0 - 6.6	4.8 - 6.5	2.3 - 3.6	4.3 - 5.5
Gamblers tend to smoke/drink heavily/unhealthy environment	2.0 - 5.5	2.7 - 4.4	1.1 - 2.0	2.5 - 3.6
Creates social problems/has negative social impacts	2.2 - 4	4.4 - 6.1	5.7 - 7.9	4.9 - 6.2

Appendix H: Productivity Commission (1999) Comparison Tables

Table H–1: SOGS (5+) defined problem gamblers by age group for Australia 1999[1] and the NT 2005[2]

Age (years)	Problem gamblers PC (%)	Problem gamblers NT (%)	All gamblers PC (%)	All gamblers NT (%)	Non-gamblers PC (%)	Non-gamblers NT (%)
Under 25	26.4	7.4	13.8	7.5	11.2	7.5
25-29	15.1	3.7	9.4	8.1	9.3	8.1
30-34	8.4	13.0	11.6	11.8	8.2	12.5
35-39	10.6	14.8	10.2	13.5	10.1	13.2
40-44	6.8	7.4	10.2	13.6	9.4	13.4
45-49	9.0	18.5	9.7	13.5	10.6	13.3
50-54	8.3	13.0	11.0	10.9	10.0	10.7
55-59	8.1	14.8	7.7	10.0	7.2	9.4
60-64	2.6	5.6	4.7	5.3	5.5	5.3
65-69	3.3	1.9	4.4	3.0	5.3	3.1
70+	1.5	-	7.2	3.0	13.4	3.4
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: Productivity Commission 1999 and NT Gambling Prevalence Survey 2005

Table H2: Participation and frequency of gambling by adult for Australia 1999[1] and the NT 2005[2]

Gambling activity	More than 3 times a week (%) Aust 1999 (%)	More than 3 times a week (%) NT 2005 (%)	1 to 3 times a week (%) Aust 1999 (%)	1 to 3 times a week (%) NT 2005 (%)	1 to 3 times a month (%) Aust 1999 (%)	1 to 3 times a month (%) NT 2005 (%)	Less than once a month (%) Aust 1999 (%)	Less than once a month (%) NT 2005 (%)	Total participation (%) Aust 1999 (%)	Total participation (%) NT 2005 (%)
Played lotto or other lottery game	6	1.00	45	33.5	24	26.9	25	38.6	60	50.3 - 53.6
Bought instant scratch tickets	1	0.10	14	8.2	33	28.6	52	63.1	46	26.2 - 29.4
Played poker or gaming machines	2	0.35	11	9.2	25	24.8	62	65.6	39	25.0 - 27.9
Bet on horse or greyhound races	2	1.01	13	8.1	14	14.9	71	76.0	24	17.6 - 20.2
Played keno at club / hotel / casino / other	1	1.13	7	9.4	20	21.5	72	68.1	16	20.9 - 23.7
Played table games at a casino	0	0.17	2	2.2	15	13.1	82	84.6	10	8.9 - 11.3
Bet on a sporting event	0	0.63	23	17.4	25	18.2	52	63.8	6	4.5 - 5.7
Played bingo at a club or hall	2	0.00	27	22.0	23	15.0	49	63.0	5	1.3 - 2.4
Played games privately for money	2	2.49	7	9.8	23	21.4	68	66.3	5	3.0 - 4.1
Played an Internet casino game	4	0.14	21	0.11	15	0.00	60	0.35	0.4	0.4 - 0.8
Any gambling activity	13		37		24		26		82	

Source: 1999 PC National Gambling Survey and 2005 NT Gambling Prevalence Survey

Table H3: Regular, non-regular and non-gamblers profiles for Australia 1999[1] and the NT 2005

	Regular gamblers		Non-regular gamblers		Non-gamblers		All	
	Aust 1999 (%)	NT 2005 (%)	Aust 1999 (%)	NT 2005 (%)	Aust 1999 (%)	NT 2005 (%)	Aust 1999 (%)	NT 2005 (%)
Gender								
Male	60.4	69.5	48.6	50.3	45.0	50.0	49.1	51.7
Female	39.6	30.5	51.4	49.7	55.0	50.0	50.9	48.3
Age								
18-24	17.8	15.7	13.2	14.9	11.2	13.6	13.3	14.6
25-34	18.2	20.5	21.4	23.6	17.4	26.4	20.4	24.1
35-49	24.0	26.4	31.0	34.8	30.0	32.2	30.1	33.5
50-64	25.4	31.8	23.2	23.0	22.7	22.4	23.3	23.5
65+	14.7	5.6	11.3	3.8	18.7	5.4	13.0	4.4
Indigenous[a]								
Yes	2.5	9.2	1.5	10.2	1.0	12.0	1.5	10.6
Country of birth								
Australia	80.2	81.5	77.4	82.8	72.1	78.8	76.7	81.6
Other	19.8	18.5	22.6	17.2	27.9	21.2	23.4	18.4
Marital status								
Married or living with a partner	60.2	65.7	66.9	66.3	66.3	67.7	66.1	66.6
Separated or divorced	7.5	8.4	5.7	7.2	4.6	6.0	5.7	7.0
Widowed	5.7	2.2	3.3	1.6	6.5	1.3	4.1	1.6
Single	26.7	23.7	23.9	24.9	21.9	24.9	23.8	24.8
Household type								
Single person	11.5	13.4	7.7	13.6	10.8	12.0	8.6	13.2
One parent family with children	5.1	5.0	5.0	7.1	4.0	4.1	4.8	6.2
Couple with children	43.9	29.8	51.2	40.1	48.5	42.2	50.0	39.9
Couple with no children	22.7	31.1	22.1	28.3	23.7	23.0	22.3	27.1
Group household	12.2	16.0	11.1	7.5	9.8	15.5	11.0	10.3
Other	4.6	4.7	2.8	3.3	2.9	3.3	3.0	3.4
Education level								
Up to 4th Year	39.3	24.6	28.1	23.9	24.6	19.0	28.6	22.7
Completed secondary	30.3	42.2	28.3	33.7	24.0	27.7	27.7	32.7
Tertiary diploma	10.5	13.3	11.3	12.4	7.8	14.6	10.5	13.0
University	19.8	19.9	32.3	30.0	43.7	38.7	33.2	31.6
Personal income ($'000)								
<10	17.7	6.4	19.7	5.2	21.5	9.4	19.7	6.3
10-25	23.9	13.8	24.1	14.2	27.9	13.4	24.7	14.0
25-35	20.4	10.5	18.9	11.8	16.1	10.6	18.6	11.4
35-49	18.6	22.1	19.0	24.3	15.9	23.3	18.5	23.9
50+	19.5	47.2	18.3	44.6	18.5	43.3	18.5	44.5
Labour force status								
Working full-time	49.7	73.8	48.2	68.7	41.9	67.0	47.2	68.6
Working part-time	13.4	8.0	16.4	12.5	15.3	13.0	15.9	12.3
Home duties	6.4	3.7	10.7	5.2	9.2	6.2	10.1	5.4
Student	5.1	2.3	5.4	3.2	6.6	3.3	5.6	3.1
Retired (self-supporting)	11.8	6.4	8.5	3.6	12.8	5.1	9.6	4.2
Pensioner	10.8	3.3	6.6	3.3	9.3	2.4	7.5	3.1
Unemployed/looking for work	2.6	1.5	2.9	2.9	2.4	1.2	2.8	2.4
Other	0.3	1.0	1.1	0.6	2.0	1.8	1.2	1.0
Main household income source								
Wages/salary	60.8	78.3	64.0	79.4	52.8	81.2	61.6	79.8
Own business	10.7	9.6	14.2	9.2	18.2	8.8	14.6	9.1
Other private income	2.8	0.3	3.0	1.5	4.4	1.2	3.2	1.4
Unemployment benefit	1.9	3.2	2.4	0.8	2.0	1.3	2.2	1.1
Retirement benefit	5.1	3.2	3.6	2.2	5.1	2.2	4	2.3
Sickness benefit	0.1	0.2	0.2	0.6	0.3	0.5	0.2	0.6
Supporting parent benefit	1.5	1.1	1.5	1.1	0.5	0.8	1.3	1.0
Aged / invalid pension	13.3	2.0	7.8	3.7	12.5	2.9	9.2	3.4
Other	2.7	0.7	2.5	1.4	2.1	1.1	2.5	1.3

	Regular gamblers		Non-regular gamblers		Non-gamblers		All	
	Aust 1999 (%)	NT 2005 (%)	Aust 1999 (%)	NT 2005 (%)	Aust 1999 (%)	NT 2005 (%)	Aust 1999 (%)	NT 2005 (%)
Location								
Metropolitan	59.8	-	64.0	-	70.1	-	64.7	-
Non-metropolitan	40.2	-	36.0	-	29.9	-	35.3	-
Darwin		50.3		54.4		42.7		50.9
Alice		12.5		11.1		12.6		11.6
Katherine		7.0		4.5		5.0		4.8
Tennant Creek / Nhulunbuy		6.9		4.7		3.3		4.5
Rest OF NT		23.4		25.3		36.4		28.1

Notes: [1] 1999 Productivity Commission, [2] 2005 NT Gambling Prevalence Survey.
Sources: 1999 PC National Gambling Survey and 2005 NT Gambling Prevalence Survey

Appendix I: Prevalence Results for the CPGI

Table I–1: Prevalence (percentage) of CPGI (8+) problem gamblers in the NT

	Gambler type using CPGI 8+			Non-gambler
	Problem gambler	Regular non-problem gambler	Non-regular gambler	
	Lower – upper bound (%)	Lower – upper bound (%)	Lower – upper bound (%)	Lower – upper bound (%)
Northern Territory	**0.52 - 0.76**	**6.3 - 7.4**	**64.1 - 67.0**	**25.6 - 28.3**
Gender				
Male	0.61 - 1.02	**8.4 - 10.2**	61.8 - 66.1	24.1 - 27.8
Female	0.33 - 0.56	3.7 - 4.8	65.3 - 69.2	26.2 - 29.9
Age group[1]				
18-24	0.74 - 1.85	5.0 - 8.6	61.6 - 72.0	20.3 - 30.0
25-34	**0.16 - 0.42**	5.0 - 7.2	60.8 - 67.4	26.5 - 32.6
35-49	0.55 - 0.93	**4.6 - 5.8**	66.2 - 70.1	24.1 - 27.8
50+	0.30 - 0.65	**8.6 - 10.6**	60.6 - 65.4	24.8 - 29.1
Indigenous status[2]				
Yes	0.30 - 0.88	4.1 - 7.5	56.6 - 69.4	24.5 - 36.7
No	0.52 - 0.78	6.3 - 7.4	64.5 - 67.3	25.3 - 27.9
Country of birth[2]				
Australia	0.49 - 0.75	6.2 - 7.3	64.9 - 68.2	24.6 - 27.6
other	0.43 - 1.06	5.6 - 7.7	58.4 - 64.3	**28.4 - 34.1**
Main language spoken at home				
English	0.37 - 0.87	6.6 - 7.1	65.8 - 66.1	26.4 - 26.8
non-English	0.04 - 2.27	**3.5 - 5.7**	**57.2 - 58.6**	**35.5 - 37.3**
Marital status[2]				
Married Or Living With A Partner	0.35 - 0.58	6.2 - 7.5	63.6 - 67.0	25.8 - 29.0
Separated Or Divorced	0.73 - 1.71	6.1 - 9.3	64.1 - 71.5	20.0 - 26.6
Widowed	0.00 - 1.11	6.5 - 13.1	59.8 - 73.7	17.0 - 28.8
Single	0.64 - 1.32	5.1 - 7.1	62.4 - 69.2	24.0 - 30.2
Refused	0	0	14.4 - 67.4	**32.6 - 85.6**
Household type[2]				
Single Person	0.35 - 0.99	5.5 - 8.2	64.4 - 71.3	21.6 - 27.7
One Parent Family With Children	0.64 - 2.08	**3.2 - 6.1**	**70.7 - 81.0**	**13.9 - 22.4**
Couple With Children	0.31 - 0.62	4.5 - 5.7	63.9 - 68.0	26.6 - 30.4
Couple With No Children	**0.18 - 0.44**	7.1 - 9.2	65.9 - 71.3	**20.5 - 25.3**
Group Household	**0.94 - 2.22**	**7.4 - 12.4**	**42.1 - 53.5**	**34.8 - 46.6**
Other	0.00 - 2.55	5.2 - 12.9	56.3 - 71.6	19.3 - 32.2
Highest educational attainment[3]				
Primary & below	0.51 - 1.09	6.0 - 8.5	66.4 - 72.5	**19.8 - 25.3**
Some secondary	0.71 - 1.24	**7.5 - 9.6**	65.0 - 70.5	**20.1 - 25.3**
Some tertiary (not uni)	**0.12 - 0.50**	6.1 - 8.5	59.1 - 65.7	27.0 - 33.0
Some university	**0.20 - 0.48**	**3.6 - 5.0**	59.8 - 65.0	30.5 - 35.4
Household income[4]				
LT $20,000	**0.66 - 1.52**	5.1 - 7.9	63.7 - 70.2	22.6 - 28.3
$20,000-$39,999	0.36 - 0.97	5.6 - 7.8	66.9 - 73.2	**19.7 - 25.4**
$40,000-$59,999	0.38 - 0.75	5.7 - 7.8	64.8 - 70.6	22.1 - 27.8
$60,000-$79,999	**0.00 - 0.34**	5.6 - 8.1	63.0 - 69.3	23.9 - 29.8
$80,000-$99,999	0.29 - 1.80	**8.2 - 14.2**	62.1 - 74.1	**15.0 - 24.2**
$100,000 or more	0.43 - 1.55	**8.6 - 14.3**	65.1 - 75.2	**13.7 - 21.0**
Don't know	0.23 - 0.77	**2.6 - 4.2**	48.2 - 57.0	39.2 - 47.8
Labour force status[5]				
Working Full-time	0.49 - 0.78	6.6 - 8.0	63.9 - 67.4	24.7 - 28.1
Working Part-time	0.19 - 0.71	**3.4 - 5.3**	63.0 - 70.2	25.2 - 32.0
Home Duties	0.21 - 0.92	2.7 - 6.5	58.5 - 69.0	26.0 - 36.1
Student	0.17 - 1.13	1.7 - 7.9	56.5 - 75.8	19.0 - 37.8
Retired	0.00 - 0.89	**7.8 - 13.8**	50.1 - 62.1	27.2 - 38.2
Pensioner	0.23 - 1.56	4.9 - 9.4	64.1 - 76.7	16.2 - 26.9
Unemployed Or Looking For Work	0.39 - 4.53	**0.9 - 3.6**	**73.8 - 88.8**	**7.8 - 20.1**
Other	0	3.7 - 11.3	**29.5 - 55.8**	**36.7 - 63.0**

Notes: 1) Midpoints for percentage ranges may not total to 100% across rows due to rounding. 2)Population totals may not add to 138,225 in all socio-demographic variables due to missing data (see below). 3) The total number of people represents weighted survey data. For unweighted data tables refer to Appendix X. 4) [1] Population total is 138,225; [2] Population total is 136,895; [3] Population total is 136,818; [4] Population total is 118,839; [5] Population total is 136,874

References

Alder, O. (1998). *Northern Territory Gaming Machine Industry*. Report to the Department of Industries and Small Business.

Altman, J. (1985). Gambling as a Mode of Redistributing and Accumulating Cash Among Aborigines: A Case Study from Arnhem Land. In G. Caldwell, B. Haig, M. Dickerson and L. Sylvan, *Gambling in Australia*. Sydney, Croon Helm**,** pp. 50–67.

Australian Bureau of Statistics (2001a). *2001 Census of Population and Housing Population Summary*, Northern Territory. ABS Catalogue no. 2018.7. Canberra.

Australian Bureau of Statistics (2001b). *ABS Statistical Geography Volume 1: Australian Standard Geographical Classification (ASGC)*. Publication no. 1216.0. Canberra.

Australian Bureau of Statistics (2002). *National Aboriginal and Torres Strait Islander Social Survey*. Canberra.

Australian Bureau of Statistics (2005). *Regional Statistics, Northern Territory*. Cat no. 1362.7. Canberra.

Babbie, E. (2004). *The Practice of Social Research* (10th edn). Thomas Wadsworth, Australia.

Banks, G. (2002). *The Productivity Commission's Gambling Inquiry: 3 years on,* Presentation to the 12th Annual Conference of the National Association for Gambling Studies. Productivity Commission, Canberra.

Battersby, M.W., Thomas, L. J., Tolchard, B. and Esterman, A. (2002). The South Oaks Gambling screen: a review with reference to Australian use. *Journal of Gambling Studies* 18(3): 257–271.

Brady, M. (1998). *The potential impact of poker machine gambling on Aboriginal residents of Yalata and the Maralinga Lands*. Australian Institute of Aboriginal and Torres Strait Islander Studies, Canberra.

Dickerson, M. (1996). *A Preliminary Exploration of the Positive and Negative Impacts of Gaming and Waging on Aboriginal People in New South Wales*. Australian Institute of Gambling Research, Sydney.

Ferris, J. and Wynne, H. (2001). *The Canadian Problem Gambling Index: Final Report*, Canadian Centre on Substance Abuse.

Fisher (1999). A prevalence study of gambling and problem gambling in British adolescents. *Addiction Research* 7(6): 509–538.

Goodale, J. C. (1987). 'Gambling is hard work: card playing in Tiwi society'. *Oceania* 58(1): 6–21.

Lesieur, H. R. and Rosenthal, R. J. (1993). Analysis of pathological gambling for the task force on DSM-IV. In T. A. Widiger, A. Frances, H. Pincus and R. Ross. *Source Book for the Diagnostic and Statistical Manual* (4th edn). American Psychological Association, Washington DC.

Lesieur, H. R. (1994). Epidemiological surveys of pathological gambling: Critique and suggestions for modification. *Journal of Gambling Studies* 10(4): 385–98.

Lesieur, H. R. and Blume, S. B. (1987). The South Oaks gambling screen (SOGS): a new instrument for the identification of problem gamblers. *American Journal of Psychiatry* 144: 1184–88.

Lesieur, H. R. and Blume, S. B. (1993). Revising the South Oaks Gambling Screen in different settings. *Journal of Gambling Studies* 9(3): 213–23.

Marotta, J. J., Cornelius, J. A. and Eadington, W. R. (eds) (2002). *The Downside: Problem and Pathological Gambling*. Institute for the Study of Gambling and Commercial Gaming Institute, Reno.

Marshall, D. and Baker, R. (2001). Clubs, spades, diamonds and disadvantage: the geography of electronic gaming machines in Melbourne. *Australian Geographic Studies* 39(1): 17–33.

Marshall, D. and Baker, R. (2002). The evolving market structures of gambling: case studies modelling the socioeconomic assignment of gambling machines in Melbourne and Sydney, Australia. *Journal of Gambling Studies* 18(3): 273–91.

McMillen, J., Marshall, D., Ahmed, E. and Wenzel, M. (2004). Victorian Longitudinal Communities Attitudes Survey. *Report for the Gambling Research Panel (GRP Report No. 6)*. Department of Justice, Melbourne.

McMillen, J. and Togni, S. (2000). *Study of Gambling in the Northern Territory 1996–97*, Australian Institute of Gambling Research, University of Western Sydney.

Orford, J. (2001). *Excessive Appetites: A Psychological View of Addiction*. John Wiley and Sons, Chichester.

Productivity Commission (1999). *Australia's Gambling Industries*, Report No. 10. AusInfo, Canberra.

Queensland Government (2005). Queensland Household Gambling Survey 2003/04. Queensland Treasury, Brisbane.

Queensland Government Office of Economic and Statistical Research (2005). *Australian Gambling Statistics 1978–79 to 2003–04*. Queensland Government, Brisbane.

South Australian Centre for Economic Studies and Department of Psychology University of Adelaide (2005a). *Problem Gambling and Harm: Towards a National Definition*. Prepared for the National Gambling Research Program Working Party, Adelaide, SA.

South Australian Centre for Economic Studies (2005b). *Community Impacts of Electronic Gaming Machine Gambling (Part A)*. Department of Justice, State of Victoria, Melbourne.

Thomas, S., Jackson, A. and Blaszczynski, A. (2003). Measuring Problem Gambling – Evaluation of the Victorian Gambling Screen. *Report for the Gambling Research Panel (GRP Report No. 4)*. Department of Justice, Melbourne.

Tyler, W. & Morrison, P., (1996). 'Dimensions of Disadvantage: Developing Small Area Indicators for Remote Australia', *Australian Journal of Social Research*, Vol. 2 (1): 59–80.

Volberg, R. A. (2002). *Gambling and Problem Gambling in Nevada*. Gemini Research, Northampton, MA.

Wenzel, M., McMillen, J., Marshall, D. and Ahmed, E. (2004). Validation of the Victorian Gambling Screen. *Report for the Gambling Research Panel (GRP Report No. 7)*. Department of Justice, Melbourne.