



# **An Overview of Gambling in the Northern Territory**

*October 2006*



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





# An Overview of Gambling in the Northern Territory

## **Integrated Summary and Future Directions of the Charles Darwin University Gambling Research Program 2005-06**

**October 2006**

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Two consulting firms were contracted to complete parts of the project. *ACIL Tasman* completed the economic impact assessment, while *Roy Morgan Research* conducted the data collection phase of the telephone survey.

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An Overview of Gambling in the Northern Territory: Integrated Summary and Future Directions of the Charles Darwin University Gambling Research Program 2005-06

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# Executive summary

## Gambling Participation

**Key message:** Average recorded gambling participation levels in the telephone survey were generally lower in the NT population than the nearest comparable results from other jurisdictions. This may in part be due to differences in population composition. NT participation was highest amongst particular groups including those at either end of the income scale, older people, males, and people with low levels of formal education.

**Response:** There exists a need to understand in more detail why some sections of the NT population gamble more than others, and conversely why some do not gamble as much.

**Key message:** The pattern of participation in particular gambling activities was similar to the national picture with the top six gambling activities in the NT including lottery games (53% participation), instant scratch tickets (29%), poker machines (27%), race betting (19%), keno (23%), and casino table games (10%).

**Response:** These participation levels will no doubt change as new technologies are adopted (eg. online gambling) and the population changes over time. They do however represent a NT baseline that future research may use as a comparative base when tracking changes in gambling participation by activity over time.

**Key message:** There was relatively little variation between regions of the NT in gambling participation. 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 levels (77% and 71% respectively). The highest participation was in Tennant Creek/Nhulunbuy (80%). The lowest participation was in the rest of the NT (65%). This lower figure for the rest of the NT may reflect reduced access to gambling opportunities outside urban centres.

**Response:** While accessibility to gambling opportunities are important, there are likely to be many other factors beyond accessibility that affect gambling participation, including the available range of alternative recreational opportunities and settings. Gambling venues may therefore be relatively more important in smaller centres given the more narrow range of recreational opportunities in comparison to cities, and this should be considered when assessing social impacts.

## Problem Gambling

**Key message:** Substantial levels of problem gambling were estimated to exist in the NT. The prevalence of problem gambling in the NT, as defined by the SOGS 5+ threshold, is 1.06% with a 95% confidence interval of 0.73% to 1.43%. This means that, as measured by the SOGS, the NT has an estimated 1,465 problem gamblers with an approximate lower bound of 1,000 and upper bound of 2,000. Even though these levels are probably lower than the national average, they are comparable with some state results such as those from Queensland.

**Response:** Although the NT is middling in terms of problem gambling prevalence, intervention is justified and necessary. Problem gambling is significant, affecting a large number of people directly, and even more indirectly. True problem gambling prevalence in the NT may be higher than the results suggest due to under-representation in the Indigenous population in the prevalence survey.

**Key message:** The estimate of problem gambling prevalence, as well as the definition of problem gamblers as a group, varies significantly according to the gambling screen used. The CPGI 8+ definition provided a lower estimate of problem gambling at 0.64% of the NT population, with a 95% confidence interval of 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.

**Response:** While further research is required into the validity of the respective screens, initial results from the prevalence survey and previous research completed elsewhere suggests that the CPGI screen would be best the suited instrument for population-level research in further NT studies.

**Key message:** In terms of regional differences Alice Springs had the highest prevalence of problem gambling, followed by Darwin and Katherine with similar levels, with lower levels in Tennant/ Nhulunbuy and the rest of the NT. However, the only statistically significant difference was between Darwin and the rest of the NT.

**Response:** There may be an association between gambling and urbanity. However, more research is needed on the possible influences of increased availability of gambling opportunities in urban centres (including access to casinos, combined with more pubs and clubs housing poker machines and keno) on the prevalence of problem gambling.

**Key message:** The 1.1% of the population defined as problem gamblers by the SOGS screen 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.

**Response:** The magnitude of economic loss for problem gamblers is extraordinary given they make up only a very small percentage of the population. Therefore, the extent of social consequences for this group and their relations must inevitably reflect this loss. Although an accurate assessment of the extent of such impacts is very difficult to estimate, an understanding would necessarily disaggregate consequences according to social and economic groupings of the gamblers.

**Key message:** Problem gamblers are too diverse to allow for a well-defined socio-demographic profile, even though there are some characteristics which are more common than expected amongst problem gamblers. Specifically, problem gamblers tend to be poorer and less well-educated than the general population. However, while socially disadvantaged individuals are at higher risk of becoming problem gamblers than the general population, it is important to recognise problem gambling can afflict people of diverse characteristics and from all walks of life.

**Response:** The broad socio-demographic characteristics of problem gamblers do not provide a comprehensive platform for interventions, largely because it is a relatively

diverse group. Other approaches seeking to more specifically examine the risk factors for and pathways into problem gambling would be of value.

**Key message:** The socio-demographic characteristics of problem gamblers were different to those for regular gambling, where gender (ie. male) and age (ie. over 55) were significant discriminators. This indicates that problem gamblers are not just intense versions of regular gamblers; they are a fundamentally different population group.

**Response:** It is important to recognise that other factors, in addition to or besides previous gambling behaviour, are likely to influence who becomes a problem gambler. More research is required into the pathways into problem gambling, beyond a concern with socio-demographic description, to determine which combination of factors determines problem gambling, as this has obvious implications for strategies of prevention and intervention.

**Key message:** While it is difficult to define problem gamblers demographically, it is nonetheless likely that as the demographic composition of the NT changes so will gambling patterns and the prevalence of problem gambling.

**Response:** In terms of affecting behaviour of problem gamblers, education strategies may be a general preventative and longer term-policy, especially in primary schools, given that problem gamblers are less likely to be educated at higher levels. However such an approach is broad, and would not necessarily distinguish between potential problem and non-problem gamblers. A way forward may be to implement a broad-based approach to education strategies until research indicates how best to target potential problem gamblers. Further research is recommended, designed to tease out early indicators of problem gambling in individuals on which to base education and other intervention strategies.

## **Gambling by the Indigenous population**

**Key message:** The prevalence survey only provided information about relatively affluent urban-dwelling Indigenous residents. Findings from this small sample are inconclusive because of the sample bias involved.

**Response:** A larger, more representative sample of NT Indigenous population needs to be included in any subsequent surveys. The cultural appropriateness of existing gambling screens would necessarily be assessed and reframed by such a study.

**Key message:** Indigenous gambling problems are likely to be more prevalent than in the non-Indigenous population. This may be particularly so in remote areas. This is precisely the group that falls outside the prevalence work. As a result, problem gambling in the NT may be much higher than the prevalence survey suggests.

**Response:** Further information is needed on the levels of problem gambling in remote areas, including the related social effects and mechanisms for amelioration.

**Key message:** Unregulated gambling is pervasive but varies from community to community. Problems associated with card games (ie. becoming less redistributive and socially problematic) may be increasing.

**Response:** Research is needed that addresses reasons for prevalent gambling in some communities and not others. In addition, the observation that the nature of card-rings may be changing requires further investigation.

**Key message:** Regulated gambling may be drawing money from unregulated gambling, increasing the rate at which money leaves communities.

**Response:** Regulation and impact assessments of poker machines in the NT need to consider the effects of gambling venues on Indigenous people. Entire communities may be affected if large sums of money find their way directly from card games to poker machines and casinos. There is a need to assess the impact of venues on communities, some of which are remote. To do this, patrons of gaming venues and their gambling practices and mobility patterns need to be considered.

**Key message:** Problem gambling in Indigenous communities is interrelated with a range of social problems and may not be meaningfully divorced from them.

**Response:** Intervention in Indigenous communities will therefore need a broad community-based approach. It is necessary to know what specific problems are in different communities, and then integrate gambling as part of a broader intervention within in vulnerable communities. Gambling policy also needs to be fully integrated with other social policies.

## **Economic Costs and Benefits of Gambling**

**Key message:** According to the ACIL Tasman study, during 2004-2005, a total of \$4.0 billion was bet on all forms of formal gambling services produced in the NT. Over 93 per cent of this total was returned to players as winnings. The net takings by the industry amounted to \$ 272.4 million for the same period.

**Response:** The revenue gained from gambling and associated expenditure is very significant to the gross state product of the NT. However, unregulated forms of gambling and subsequent effects have not been included in this study. It is likely that the sum total of gambling related exchange is much higher. It is likely that this activity will continue to increase along with the associated social, economic, and cultural consequences, both positive and negative. A substantial research program needs to be continued in order to guide future gambling regulation.

**Key message:** The economic benefits of gambling in the NT as estimated by ACIL Tasman include consumer surplus (of between \$42 million and \$91 million in 2004-05), defined as the price a consumer would be prepared to pay over and above the asking price, and government taxation revenue (\$48 million in 2004-05). The measure of consumer surplus depends on a range of assumptions and is open to competing assessments.

**Response:** Care needs to be taken when interpreting the economic assessment figures. They are estimates and therefore contestable. Policy makers would be advised to take this into account, and either commission an independent review of the assessments or commission other impact studies. This approach is standard practice of the Productivity Commission when conducting such work (Banks 2002).

**Key message:** The ACIL Tasman estimates of the economic costs of problem gambling, using an updated framework proposed by the Productivity Commission, were between \$9 million and \$28 million.

**Response:** These estimates are based solely on prevalence levels derived from the Prevalence Survey and do not fully include Indigenous problem gambling. Because the full economic costs of Indigenous problem gambling are not included, it is likely the real economic cost to the NT of gambling are much higher than estimated by the ACIL Tasman survey. Future estimates should include the costs of Indigenous problem gambling.

**Key message:** Gamblers from outside the NT are responsible for a considerable share of NT gambling expenditure, generating a positive economic outcome for the NT. The economic impact assessment did not account for problem gamblers outside the NT who use NT gambling services.

**Response:** A full social impact assessment should include gambling problems sourced in the NT, but experienced by individuals outside the NT. The question of the NT's responsibility to problem gamblers using its services, but residing in other jurisdictions, needs to be considered. These costs would need to be considered in a full economic impact assessment.

**Key message:** The net economic impact of the NT gambling industry in 2004-05 was estimated by ACIL Tasman as a positive net benefit between \$81 million and \$111 million. This is a relatively larger and more positive impact than the estimate made for Australia as a whole by the Productivity Commission.

**Response:** Overall the NT gambling industry is likely to generate a positive economic impact. However, this assessment is influenced by assumptions about consumer surplus; an underestimation of the level of problem gambling (as estimates did not include an adequate sample of the Indigenous population), and expenditure by gamblers outside the NT. As such, the assessment should be treated cautiously as a very different result may be achieved through the use of more comprehensive methods.

**Key message:** The economic impact assessment is contestable and on its own may be of limited policy value as it presents an aggregate overview rather than detailed information about particular types of gambling. This is significant because particular forms of gambling may require a different policy response.

**Response:** Policy must consider an assessment of all the costs and benefits. However the related social costs of gambling are as yet incompletely determined. Further research in this area is needed in order to categorise, describe and quantify social outcomes of gambling, before full information becomes available enabling an evidence based policy response.

## **Poker Machines**

**Key message:** Poker machine expenditure has been steadily increasing over the past decade. While average machine expenditure has levelled off in casinos, it is still increasing in community venues. Poker machine gambling and associated consequences pose the most significant gambling risk to NT residents.

**Response:** Careful attention needs to be given to poker machine regulation. In particular, more detailed social impact assessment specific to venues needs to be developed before licensing policies are changed.

**Key message:** Poker machine takings have increased significantly in recent years and may be expected to increase even further in future years, even if there is no further increase in machine numbers.

**Response:** A detailed assessment of the current and future extent of social consequences related to poker machine losses is urgently needed, in order to fully inform appropriate policy responses to the regulation of gaming machines.

**Key message:** The net economic impact of poker machines estimated by ACIL Tasman was positive, ranging from \$33 million to \$44 million.

**Response:** As with estimates for the total gambling modes, these figures need to be interpreted with some caution. More detailed analysis of the impact of individual venues needs to be conducted to accurately assess the regional social impacts of poker machines.

**Key messages:** The socio-spatial relationship between poker machine concentration and economic disadvantage was not evident in the NT.

**Response:** The methods used elsewhere are not appropriate for similar analysis in the NT largely due to its unique social geography. Research needs to look at the effect of venue-specific processes and develop methods suitable for the NT context.

**Key message:** A 'concentration effect' was identified where higher rates of return per machine are associated with a higher number of machines per venue.

**Response:** The policy of capping is an important counteract to the concentration effect, particularly in hotels. Caps on machine numbers in clubs only affect several of the larger clubs. The caps should not be changed until more detailed investigation of the relationship between capping, clustering, and other venue-related issues, particularly venue catchments and clientele, are investigated.

## **Community Attitudes**

**Key message:** A significant majority of the population (70%) does not agree that gambling is a positive benefit to the community, although the attitudes of Indigenous people were not well canvassed in the prevalence survey.

**Response:** There is a need to gauge attitudes of the large Indigenous population through the design and conduction of a specific survey tailored to include this group, taking into account limited telephone access, as well as significantly different social, cultural and demographic characteristics.

**Key message:** Community attitudes towards gambling, although tolerant, are not supportive of expansion of gaming machines, particularly into community venues, largely as a result of perceived negative social and community impacts. There is little support for more poker machines, particularly outside of casinos. The survey showed tolerance for machines within casinos, whereas machines in community venues were perceived far less positively.

**Response:** Licensing policies could consider the varied perceptions of poker machines in different venues, with greatest community sensitivities existing in relation to pubs and clubs.

**Key message:** Broadly speaking, community attitudes displayed a full awareness of the extent and nature of social impacts of poker machines, as well as of the economic benefits from the gambling industry. On balance, the perceived social costs of poker machines were more readily identified and described than the perceived economic benefits.

**Response:** More research needs to be done on the actual social costs and benefits of poker machines, beyond the economic impact assessment completed by ACIL Tasman, to present a more complete picture for community debate and consideration.

### **Future Research Directions**

**Key message:** Several areas of knowledge have not been advanced by this research. The social costs and benefits of gambling in the NT have not been adequately explored. A full cost analysis/accounting has not been possible as to date only the economic costs and benefits have been systematically documented and analysed. Further, only anecdotal and second-hand accounts of social costs and benefits are available. There is virtually no information available on the social benefits (except for a small area in the scoping study). This is significant as one of the arguments for gambling is the social benefits it brings – both directly through such things as people getting together to gamble, and indirectly through the activities gambling profits to community clubs via funds.

**Response:** A fruitful future piece of research would explore and measure in greater detail the social costs and benefits related to gambling.

**Key message:** The fundamental point to make is that the research in the other reports looks mainly at the consumers of gambling products. However gambling is a broader social system of which consumers form only one part.

**Response:** The current document suggests a more meaningful framework for conceptualising gambling as a social practice (set out in Chapter 8). Several core future research areas are recommended:

- Indigenous people (both remote and urban) and gambling is the priority area for research. Little is known of the issues associated with gambling by Indigenous residents or how to address these issues, particularly the relationships between card playing and poker machines/casinos.
- Significant further analysis on the prevalence and player loss data sets.
- Studies of venues, including the casinos, are required in order to examine the size and shape of venue catchments, the nature of social impacts (both positive and negative), and how these impacts are spatially distributed.
- Assessment of the consequences of excessive gambling on particular vulnerable groups (eg. poker machine players and their families with low incomes and formal education).
- An exploration of the relationships between gambling and mobility, particularly examining non-residents and itinerant gambler groups.
- Impacts of Territory-based gambling on non-residents.

- Analysis of policies, regulations, and intervention frameworks existing elsewhere and how these may provide lessons for gambling regulation in the NT. This may incorporate research into intervention programs to reduce problem gambling and associated impacts, including evaluations of intervention programs.
- A comparative analysis of the NT gambling policy framework.

# 1. Introduction

There exists an obvious need for a well structured long-term gambling research program in the Northern Territory (NT). Historically, the absence of such a program, combined with insufficient local capacity to conduct research projects of significant scale, has been the primary impediment to producing scientifically credible, locally relevant knowledge on gambling participation and associated social and economic impacts. Apart from a 1996-97 work (McMillan and Togni 2000), no research as yet has accurately examined the characteristics and socio-economic consequences of commercial gambling in the NT.

This shortfall is particularly significant given the growth of commercial gambling over the past decade, both nationally and in the NT. Available statistics offer little insight into the patterns of gambling by the resident population. For example, they include internet and other gambling services exported by the NT as well as gambling expenditure by tourists and visitors to the NT. As a result, the proportion of gambling expenditure attributable to NT residents is difficult to estimate. More fundamentally, aggregate figures mask the diversity of gambling behaviour within the population.

Information is therefore needed about the prevalence of gambling, including participation rates and expenditure, along with estimates of the extent and social cost of problem gambling. By presenting an overview of the findings of the research project that Charles Darwin University (CDU) and its partners have been undertaking over the past 12 months, the current paper goes some way in addressing this shortfall.

The purpose of this discussion paper is to draw together three reports produced by the gambling team over the past year into an integrated overview and discussion of the nature, prevalence and associated social impacts of gambling in the NT. The gambling research project has consisted of three components: a telephone-based prevalence survey on gambling and problem gambling in the NT; a scoping study of gambling by the Indigenous population, and an assessment of the economic impacts of gambling in the NT. The results of each are comprehensively reported in separate documents:

1. Northern Territory Gambling Prevalence Survey.
2. Indigenous Gambling Scoping Study.
3. The Economic Impact of Gambling in the Northern Territory (completed by ACIL Tasman Consulting).

In order to brief partners and stakeholders on the outcomes of the study, this paper offers consideration and analysis of the most significant findings abstracted from the respective reports. This summary provides a base from which the CBF may consider future gambling policy and research in forthcoming years.

## 2. Gambling Participation by NT Residents

Total gambling expenditure in the NT, as recorded by the NT Treasury for 2004-05, was \$272.4 million. This is the amount actually spent by all gamblers (inclusive of NT residents, interstate and overseas visitors, interstate and overseas residents) after winnings are deducted. Considerable gambling expenditure flows from overseas and interstate visitors to the NT, as well as overseas and interstate residents who patronise internet gambling and online bookmaking services provided by the NT. According to estimates produced by ACIL Tasman (2006, 24) this proportion could be as high as 50 per cent. If this is the case, and if NT resident gambling activities outside the NT are not substantial, total expenditure figures may overestimate gambling expenditure by NT residents. Until this point in time, very little has actually been known about gambling participation, preferences and expenditure patterns of NT residents. Therefore academics, industry, and governments have been reliant on questionable and incomplete information about gambling activity in the NT.

For this reason, a telephone survey of a sample of 1,873 residents was conducted in August – September 2005 in order to assess participation in, and attitudes towards, gambling in the NT. The survey methodology closely followed the approach of the *National Gambling Prevalence Survey* conducted by the Productivity Commission in 1999 and achieved a broadly comparable response rate of 37 percent.

### 2.1 Gambling Participation in the NT

The telephone survey revealed 73% of adult residents in the NT participated in at least one gambling activity during the 12 month period preceding the survey (if raffles are included this figure rises to 85%). Almost two-thirds of the population (64%) reported participation in more than one gambling activity. Lotto and other lottery games had the highest participation rate (53% of the adult population). The next most frequent gambling activities included instant scratch tickets (29%), playing poker machines (27%), playing keno (23%) and betting on horse or greyhound races (19%). A small proportion of NT adults played bingo (2%) and even fewer individuals (0.6%) played internet casino games.

These participation levels are generally slightly lower than the Australian average measured in the same way by the Productivity Commission in 1999. Table 1 sets out the comparative participation levels. In fact, NT residents only participated in one activity (ie. keno) more than all Australians in 1999. Given the popularity of keno may have increased nationally 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.

There was relatively little variation between regions of the NT in gambling participation. Perhaps 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 levels (77% and 71% respectively). The highest participation was in Tennant Creek/Nhulunbuy (80%). The lowest participation was in the rest of the NT (65%). This may reflected reduced access to gambling opportunities outside urban centres.

**Table 1. Participation by adults in gambling activities for Australia 1999 and the NT 2005**

Gambling activity	Total participation (per cent)	
	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

## 2.2 Profile of Regular Gamblers

The NT population was estimated to composed between 7% and 8% regular gamblers (i.e. individuals who gambled at least once a week on activities other than lottery games or instant scratch tickets), between 64% and 67% 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 26% and 28% non-gamblers.

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.

Variables that most discriminated between gambler type were gender (men twice as likely to be regular gamblers), income (people in higher income households are more likely to be regular gamblers, and lower income less likely), and education (more educated people were generally less likely to gamble compared to the NT average).

### 3. Problem Gambling in the NT

Within the group of regular gamblers lie an even smaller, but highly significant group of 'problem gamblers'. For these individuals, gambling is a destructive activity causing 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, 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 2005)

In the area of gambling research, problem gambling is measured by the use of problem gambling screens. That is lists of items, known to be correlated with problem gambling, which are used to classify problem gamblers in a given population (Fisher 1999). Two screens were used in the NT Prevalence Survey (Young, Barnes et al. 2006): the South Oaks Gambling Screen (SOGS), and the Canadian Problem Gambling Index (CPGI). The SOGS was chosen as the primary screen because it was not only used by the *National Gambling Prevalence 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 CPGI was also used, as it has been recommended by the 2005 Ministerial Council on Gambling as the nationally preferred gambling screen for measuring problem gambling within populations. This screen was employed to benchmark the current study for future studies in the NT, and to recent studies in other jurisdictions (McMillen, Marshall et al. 2004; Queensland Government 2005).

#### 3.1 Problem Gambling Prevalence

The prevalence of problem gambling in the NT, as defined by the SOGS 5+ threshold, is 1.06% with a 95% confidence interval of 0.73% to 1.43% (Table 2). This means that, as measured by the SOGS, the NT has an estimated 1,465 problem gamblers with an 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, is 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+ definition provided a lower estimate of problem gambling at 0.64% of the NT population, with a 95% confidence interval of 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.

**Table 2. Problem gambling prevalence for the NT using SOGS 5+, SOGS 10+ and CPGI**

<b>Gambling screen</b>	<b>Prevalence estimate</b>	<b>Prevalence +/- SE of estimate</b>	<b>Prevalence +/- 95% CI of estimate</b>
% SOGS (5+) problem gamblers in NT population <sup>a</sup>	1.06	0.89 - 1.25	0.73 - 1.43
% SOGS (10+) problem gamblers in NT population <sup>a</sup>	0.23	0.15 - 0.30	0.07 - 0.37
% CPGI (8+) problem gamblers in NT population <sup>a</sup>	0.64	0.52 - 0.76	0.40 - 0.88

<sup>a</sup> The weighted population used was 138,225 persons.  
*Source:* NT Gambling Prevalence Survey 2005

The higher prevalence of problem gambling identified by the SOGS is consistent with other studies estimating problem gambling prevalence (Battersby et al 2002). Results from the Victorian survey by McMillen, Marshall et al. (2004) show a slightly higher rate for the CPGI in Australian use (ie. 0.97% CPGI compared to 1.12% SOGS) which is a smaller difference than evident in the NT results. 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. However, based on previous research (Wenzel, McMillen et al. 2004), it does appear likely that the SOGS is producing a high proportion of false positives. For this reason it is suggested the CPGI be used as the preferred future screening instrument for gambling assessment among the NT population. 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 (South Australian Centre for Economic Studies 2005).

These figures are of limited use in themselves unless they are compared to prevalence estimates in other jurisdictions. Use of the two screens enables such comparison. Table 3 presents a comparison of NT estimates with other recent Australian prevalence estimates. The NT estimates rank on par with Queensland, both exhibiting proportionately fewer problem gamblers than Victoria. 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 within the national context of problem gambling prevalence.

**Table 3: Recent problem gambling estimates from other jurisdictions**

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

*Sources:* <sup>1</sup> Queensland Household Gambling Survey 2001; 2003-4;  
<sup>2</sup> 2003 Victorian Longitudinal Communities Attitudes Survey (ANU);  
<sup>3</sup> NT Gambling Prevalence Survey 2005.

### 3.2 Problem Gambling in Regions

In terms of regional differences in problem gambling prevalence in the NT, Alice Springs had the highest prevalence of problem gambling, followed by Darwin and Katherine with similar levels, with lower levels in Tennant/ Nhulunbuy and the rest of the NT (Table 4). 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. This association that may be explained by the increased availability of gambling opportunities in urban centres, including access to casinos, combined with more pubs and clubs housing poker machines and keno.

**Table 4. SOGS 5+ Problem gambling prevalence for the NT and regions**

<b>Region</b>	<b>SOGS Prevalence estimate (%)</b>	<b>Prevalence +/- SE of estimate</b>	<b>Prevalence +/- 95% CI of estimate</b>
Darwin (N=70,406)	1.05	0.85 - 1.25	0.66 - 1.44
Alice Springs (N=16,071)	1.58	0.95 - 2.21	0.34 - 2.81
Katherine (N=6,652)	1.09	0.62 - 1.56	0.16 - 2.01
Tennant Creek/ Nhulunbuy (N=6,217)	0.65	0.18 - 1.11	0.00 - 1.56
Rest of NT (N=38,879)	0.36	0.08 - 0.64	0.00 - 0.91
Northern Territory (N=138,225)	1.06	0.89 - 1.25	0.73 - 1.43

*Source:* NT Gambling Prevalence Survey 2005

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 as non-regular gamblers to gamble on poker machines, keno, and the races. This suggests that participation on its own does not necessarily lead to increased gambling problems. One possible explanation may be that there is less to do in the smaller, remote areas. This may lead to more people gambling 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.

### 3.3 Problem Gambler Profile

Of equal interest were the activities that problem gamblers were less likely to participate in than regular gamblers. These included playing lotto, playing keno, betting on the races, and sports betting. While it may appear surprising that problem gamblers gamble less on anything, the pattern makes some sense when the nature of the activity is considered. The pokies may be played continuously and at times that suit the individual. Lotto and betting are more associated with weekly events and cycles. They are therefore less likely to satisfy the needs of problem gamblers. However, this explanation is purely speculative at this stage and more investigation of the gambling preferences of problem gamblers in the NT is warranted.

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 *underrepresented* within:

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

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 *underrepresented* 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.

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.

### **3.4 Problem Gambling Risk Factors**

More detailed multivariate analysis identified four statistically significant risk factors for problem gambling (SOGS5+). These included household income, 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 was the risk factor of highest statistical significance, however should be treated with caution due to the fact that over two thirds of Indigenous NT residents do not have access to a home phone and were thus out of scope for this survey.

The risk factors that attain statistical significance for problem gamblers defined on the basis of the SOGS5+ (income, Indigenous status, primary or secondary school education, non-English speaking background), apart from income, are precisely those that are not significant for regular gambling, where male gender, age (50 years and over), region (remote), education (no university), household (group and couples with no children) are 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. Importantly, non-English speaking background and Indigenous identity no longer appear as significant characteristics of the problem gambler. As a result of the divergence between the SOGS and the CPGI it is not possible to talk in any great detail about Indigenous problem gamblers identified by the survey. The prevalence of problem gambling within the small section of the Indigenous population surveyed as part of the NT Prevalence Report points towards the need for more research on Indigenous gambling issues, along the lines outlined in Chapter 8 of this document, before any firm conclusions may be drawn.

In an immediate sense however, the fact that one screen suggests Indigenous people are at greater risk of being problem gamblers, while 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? More intensive analysis of the prevalence survey results will go some way to answering this question. This comparative analysis of the screens 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. This will include an item by item analysis of the screens in order to find out which questions are discriminating between Indigenous problem and non-problem gamblers, and if these questions are more culturally rather than gambling dependant. However, based on validity tests done elsewhere (McMillen, Marshall et al 2004), and the fact the CPGI has been recommended for uses at the national level by the Ministerial Council on Gambling, the CPGI is recommended for any further studies at the population level in the NT.

## 4. Gambling by the Indigenous Population

### 4.1 Results of the Telephone Survey

The sample frame used by the telephone survey, by definition, excluded those sections of the population that were not contactable by phone (e.g. many Indigenous people, people in shared/group households, younger people using only mobiles, and people living in non-private dwellings such as boarding houses, retirement homes, and military barracks). Therefore, the results of the prevalence survey under-represent these highly significant sections of the population. This is particularly important in the context of the Indigenous population, as it is estimated that only 37% of the Indigenous population of 32,575 persons live in a household with a working telephone (National Aboriginal and Torres Strait Islander Social Survey 2002). 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, three-quarters of the Indigenous resident population of Darwin, some 5,567 persons, had access to a working home phone. This proportion falls to 29% when the 26,997 Indigenous residents from elsewhere in the NT are considered. Thus Indigenous respondents within the sample frame were likely to be an urban subset of a much larger population. The Indigenous sample apparent in the study was simply a subset of the urban residents who have working telephones in their homes.

This under-representation was reflected in the sample size of Indigenous people surveyed. Of the total, 126 respondents (6.7% of the survey sample) identified themselves as Indigenous to the telephone interviewers. This corresponds closely with the results achieved by the NT telephone survey conducted by McMillen and Togni (2000) in 1996, where a similar sub-sample of 7.5% of the total sample identified as Indigenous. As a consequence, the prevalence survey is limited in what it can say about the Indigenous population as a whole. Specifically, the results are limited to those Indigenous people who had a working telephone in their home at the time of the survey.

To further define this group, information was provided by the ABS from the *National Aboriginal and Torres Strait Islander Social Survey 2002*. This data revealed that:

- 93% of those in the highest income quintile had a working home telephone,
- 90% of homeowners, including those purchasing through a rent / buy scheme, had working telephones,
- 84% of those without cash flow problems had a working telephone, and
- 70% of those who could raise \$2,000 within a week had a working telephone.

Thus 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 prevalence results refer solely to this subgroup,

conceptually an 'urban Indigenous middle-class'. No other inferences could be drawn about the rest of the Indigenous population who comprise the majority of the NT Indigenous population residing outside the parameters of the telephone survey.

As discussed in Chapter 3 on problem gambling, the results of the prevalence report were somewhat contradictory when determining the level of problem gambling amongst the urban-affluent section of the Indigenous population. The emergence of Indigenous identity (i.e. relatively affluent, urban Indigenous) as a risk factor for problem gambling occurred only when using the SOGS and not with the CPGI. Therefore this work was not conclusive. More work needs to be done on the gambling screens to find out which is more effectively applied in a cross-cultural context. Even so, the use of a telephone survey methodology will invariably be limited to the urban Indigenous middle-class and therefore relatively uninformative about what level of problem gambling exists within the broader Indigenous population. One could speculate that if there are gambling problems amongst the relatively affluent urban economic elite, these problems will be greater amongst the more economically disadvantaged Indigenous population.

## 4.2 Results from other Social Surveys

A clearer picture of problem gambling in the NT Indigenous population is provided by data from two ABS surveys: the *General Social Survey 2002* and the *National Aboriginal and Torres Strait Islander Social Survey 2002* (Australian Bureau of Statistics 2002a, 2002b). Both surveys ask a question about the personal stressors experienced by respondent in the last 12 months, and one of the response options was 'gambling problems'. In the entire NT population, 3.3% (Relative Standard Error RSE 17.8%) of all persons aged 18 or older reported a gambling problem experienced either by themselves, a family member or close friend. This figure was slightly lower than the national average at 3.5%. These figures, higher than the estimates of the NT Gambling Prevalence Survey (2006), are expectedly so as they also include reported gambling problems experienced by family and friends. The fact that problem gambling in the NT is lower than the Australian level supports the findings of the prevalence survey as it produced a similar relative result.

When the Indigenous population (persons aged 15 years and over) of the NT was asked the same question by the *National Aboriginal and Torres Strait Islander Social Survey 2002*, a remarkably high 28.4% (RSE of 11.9%) reported a gambling problem by themselves, family or friends. This is almost 9 times higher than the general NT adult population. The prevalence of gambling problems was higher in remote NT (31.9% RSE 12.7), where 'remote' is defined by the ABS as everywhere outside Darwin and surrounds, than in non-remote NT (11.4% RSE 25.1%) at statistically significant levels. Therefore it is clearly evident gambling related problems occur at much higher levels in the Indigenous population of the NT than in the general population.

To provide an idea of the magnitude of gambling related problems perceived by Indigenous people, it is possible to draw a comparison with data on the prevalence of alcohol and drug related problems collected by the same survey. These figures reveal a similar prevalence (33.9% RSE 10.5%) of Indigenous persons aged 15 years or older who reported alcohol or drug problems experienced by themselves, family or

friends. Again this was higher in remote (36.9% RSE 11.5%) than non-remote NT (19.5% RSE 18.0%). The fact that figures for alcohol, drug and gambling problems are similar suggest that gambling problems in the NT Indigenous population may be prevalent at extraordinarily high levels. Thus, the real prevalence of problem gambling in the NT, particularly for the Indigenous population, is likely to be much higher than reported by the prevalence survey. Therefore the prevalence estimate of 1.07% should not be read as a clean bill of health.

However some qualifications need to be made here. First, the NATSISS does not represent a problem gambling prevalence estimate. Results are only indicative. More work needs to be done on the validity and applicability of gambling screens in a cross-cultural context before a complete population problem gambling prevalence estimate is possible. Even then, given the expense of Territory-wide household surveys, the practicalities of completing such research may be limiting. Further, gambling problems can be of many types. The question then becomes exactly what are these problems and why are they reported to be so much higher in the Indigenous population, particularly in remote areas.

### **4.3 Results of the Indigenous Gambling Scoping Study**

These questions are important because much gambling present in the Indigenous population is structured very differently to non-Indigenous gambling. Indigenous gambling types, for example card-rings, are largely outside direct regulatory control, at least in terms of taxation. To provide an initial overview of the relationship between gambling and NT Indigenous residents, a separate piece of qualitative research was conducted by Heather McDonald and Bernadette Wombo (2006). The study involved interviews with health organisations and allied services in Darwin, Katherine, Tennant Creek, and Alice Springs. Results of the study are presented in the report “Indigenous Gambling Scoping Study” (McDonald and Wombo 2006). An abridged summary of the main findings are presented in the following paragraphs. It is important to recognise that all the views presented in the scoping study, and hence in the summary which follows, represents the views of health workers, and therefore illustrate only one perspective on Indigenous gambling.

The first point raised by the scoping study is that gambling means something different in a cross-cultural context. According to McDonald and Wombo (2006), gambling by many Indigenous people is more intertwined with notions of luck based on spiritual belief, rather than upon skill and personal determination, that are perhaps associated with the wider NT population. This was found to be particularly the case for card games. It is thought probable these notions of luck and belief may also transfer to poker machine gambling amongst the Indigenous population. In other words, it is important to recognise some Indigenous people have differing cultural perspectives on the meaning and form of gambling, stemming from non-western conceptualisations of time, work, and money. Thus, drawing prevalence rate comparisons between gambling in Indigenous and non-Indigenous social contexts is problematic, as the nature and conception of ‘what is gambling’ to each group is quite different.

The smattering of anthropological research previously conducted on card rings (eg. Altman 1985; Goodale 1987; Brady 1998), has suggested Indigenous gambling is an important social and economic activity that appears to formulate one of the core

organising frameworks for community life. Importantly, and unlike western conceptions, it is not always problematised or pathologised. Indeed, the McMillen and Togni (2000) study on gambling in the NT found that card playing was viewed by many Indigenous people as a positive activity, both in social and economic terms, and as such created few problems for participants (McMillan and Togni 2000, 5). Gambling in this study appeared to be incorporated within appropriate cultural frameworks. While it remains poorly understood by western knowledge systems, indications are that it is not necessarily the social 'problem' gambling in western societies is often perceived to be.

The results of the scoping study did not bear this out. In fact, the general picture emerging from the report is one of fairly pervasive penetration of gambling with broadly negative impacts. While the scoping study was not designed to assess prevalence, reports from staff in a number of agencies suggest the prevalence of unregulated gambling is exceptionally high. This would support the results of the NAITSIS survey. However, gambling prevalence does vary between communities, with prevalence depending on factors, including social attitudes (eg. church influences) and economic viability of communities (eg. CDEP dependency) (McDonald and Wombo 2006). According to McDonald and Wombo (2006), unregulated gambling does have its positives aspects (i.e. leisure opportunities, social interaction, financial benefits for some groups/individuals), however the consequences of *excessive* gambling are increasingly negative, and include reduced participation in other areas of life (eg. family life, parenting, sport), as well as less equitable distribution of resources.

McDonald and Wombo (2006) suggest significant changes in the patterns of Indigenous gambling have occurred in recent years. In particular, they suggest there is more money flowing into communities (i.e. CDEP, tax rebates, and mining royalties) and less redistribution through gambling. They point to the importance of large prestige purchases, the increasing amount of money in games, high stakes games aggravating social tensions, large community card games attracting townspeople, knowledgeable gamblers travelling from place to place 'milking' the games, and regulated gambling (casinos and poker machines) receiving the winnings from card games. As a result, community card games now display a concentration effect, with money distributed in a less socially equitable way.

The scoping study also suggested that recently pokies have had an impact changing patterns of local card games. There is now apparent an influence from pokies on card games. It is thought perhaps some money is being diverted to pokies, subsequently increasing pressure for more money to be used for gambling, resulting in greater negative social consequence for the family members of gamblers, particularly children.

According to the scoping study (McDonald and Wombo 2006), service agency staff also emphasised that gambling is only one of many money problems Indigenous people experience. Problem gambling should not be studied in isolation from other social issues such as alcohol and drug misuse, family violence, child neglect and abuse, or sexual abuse of young people and women. Other financial problems apparent include the book-up system, Centrelink and Community Development Employment Projects (CDEP) payments, businesses and banks, royalty payments, and

excessive demand sharing. The report suggests that all major social problems in Indigenous communities have the same structural causes and therefore require the same solutions. These are to do with self-determination, community empowerment, community development, capacity building, and real forms of employment (McDonald and Wombo 2006).

Overall, gambling and associated consequences among the Indigenous population is much more appropriately considered as one part of a broader system of negative behaviours with deep seated origins and interwoven consequences. These outcomes require complex, multifaceted interventions. It is suggested further research is required in order to explore the interrelationships between a range of damaging behaviours such as alcohol and substance abuse, family violence, child abuse, and gambling practices. This form of research would potentially assist in the development of interventions that do not focus solely on gambling. Further, research programs designed to understand Indigenous gambling practices need to be carried out within a community development and self-determination framework (McDonald and Wombo 2006). This may include community-based empowerment programs in order to help people gain control over their lives by supporting people in taking greater responsibility for their decisions and actions.

## 5. Economic Costs and Benefits of Gambling in the NT

Having estimated the number problem gamblers through the prevalence survey, it is possible to provide an economic estimate of the social cost of problem gambling in the NT. The economic costs of problem gambling, if they can be costed in a way that is comparable to the revenues generated, may then be subtracted from the economic benefits, providing an estimate of the net economic value of gambling to the NT. The next part of the discussion presents results of the economic impact assessment for NT residents of gambling activity, through the net comparative outcome of economic costs and benefits. However, an attempt has not been made to comprehensively articulate the broad social costs or benefits of gambling and problem gambling in the NT, due to the wide and undefined scale of associated impacts.

### 5.1 Gambling Expenditure

Available government statistics (Queensland Government Office of Economic and Statistical Research 2005) offer little insight into the patterns of gambling by the resident population. These figures include internet and other gambling services exported by the NT, as well as gambling expenditure by tourists and other visitors to the NT. As a result, the proportion of gambling expenditure attributable to actual residents is difficult to estimate. Therefore, one of the tasks undertaken by the prevalence survey was to estimate the amount spent on each gambling activity by NT residents, as well as by different groups of gamblers within the population.

In particular, the prevalence survey estimated how much was proportionately spent by different groups of gamblers (ie. problem gamblers, regular gamblers, and non-regular gamblers). As pointed out above, problem gamblers make up a small minority of the population. However, in terms of their expenditure share, they are by far the most significant consumers of gambling services. 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 sporting events. 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.

### 5.2 Economic Benefits of Gambling

To measure the economic impact of gambling in the NT, CDU contracted ACIL Tasman Consulting to complete an economic impact assessment of gambling in the NT (ACIL Tasman 2006).

As estimated by ACIL Tasman (2006, 95) the economic benefit to the NT was composed of:

- Consumer surplus of between \$40 million and \$86 million in 2003-04, and between \$42 million and \$91 million in 2004-05. The definition of consumer surplus used in the ACIL Tasman survey is the value individuals place on a consumption opportunity over and above what it actually costs them.
- Net taxation revenue to the NTG of \$39 million in 2003-04 and \$48 million in 2004-05.

### 5.3 Economic Costs of Problem Gambling

In order to provide an estimate of the *net* economic benefit of gambling, the total costs associated with gambling (namely problem gambling) need to be subtracted from the economic benefits listed above. This requires the attribution of an economic value to categories of social, emotional and psychological harm experienced by problem gamblers and their families. This process is fraught with uncertainties. The allocation of economic values to social and emotional harm is, to a large extent, an arbitrary and contestable procedure. To minimise the inevitable uncertainty, and to keep the estimates comparable to a national benchmark, a decision was made by the CDU research team to follow as closely as possible the methods adopted by the Productivity Commission (1999). The Commission survey estimated the net economic cost of gambling at the national level. At its simplest, this procedure involves the collection of a range of information on the prevalence the range of negative consequences associated with gambling in economic terms (Productivity Commission 1999, J1).

Categories of social impact associated with problem gambling used by the Productivity Commission included:

- Financial problems including bankruptcy.
- Loss of productivity and employment, including productivity loss at and outside work, and job change.
- Crime and legal involvement including police costs, court cases, and jail costs.
- Personal and family trauma such as emotional distress of immediate family members, emotional distress of parents, relationship breakdown, financial and emotional cost of divorce, costs of violence, depression, thoughts of suicide and/or attempted suicide.
- Treatment costs including counselling services for problem gamblers.

It needs to be pointed out that these categories are ones for which an economic can reasonably be attributed. It is unlikely however they reflect the full range of social costs associated with problem gambling. Implications of this limitation increase when considering the non-urban Indigenous residents not adequately represented in the survey. However, they are the best estimates at the national level, and hence they were adopted as the basis for the economic impact assessment conducted by ACIL Tasman (2006). Dollar values estimated by the Productivity Commission were updated by ACIL Tasman (2006) into present day values. The costs per problem gambler (or unit costs) were then multiplied by the number of problem gamblers in the NT, as estimated by the NT Prevalence Survey. As a result, the economic costs of problem

gambling in the NT were estimated by ACIL Tasman to be between \$8.8 million and \$27.6 million (see Table 5).

The costs of problem gambling were estimated by ACIL Tasman at \$5,866 per problem gambler. This however would appear a paltry figure given the level of turmoil problem gamblers and their families experience. This calculation clearly does not cover the complete set of social, costs and losses experienced by problem gamblers and their relations that are non-quantifiable in economic terms. These economic assessments are therefore limited. However for purposes of comparison, national practice has simply been replicated.

**Table 5: External costs of problem gambling associated with all gambling modes in NT, present prices**

<b>Item</b>	<b>Low estimate (a)</b>	<b>High estimate (a)</b>
No. of severe problem gamblers in NT	276	276
No. of problem gamblers in NT	1,520	1,520
Cost of emotional distress to the family (severe problem gamblers) (\$m)	\$2.0	\$6.0
Other costs (all problem gamblers) (\$m)	\$6.8	\$21.5
Total cost of problem gambling in NT (\$m)	\$8.8	\$27.6

(a) prices as at the December quarter of 2005

(b) Table based on NT Prevalence Survey 2005 & ACIL Tasman estimates

Source: ACIL Tasman (2006) p.105

## 5.4 Net Economic Impact of Gambling in the NT

When subtracted from the economic benefits (i.e. consumer surplus and NT Government taxation), the results produced by ACIL Tasman reveal a significant and substantial net economic benefit derived from gambling for the NT. ACIL Tasman estimated the net economic benefit to fall between \$70 million and \$98 million in 2003-04, and between \$81 million and \$111 million in 2004-05 (Table 6). This estimate differs markedly from the net economic impact at the national level found by the Productivity Commission, which allowed for potential net economic loss generated by gambling industries. Specifically, the Commission (1999, 11.1) concluded an estimate for gambling industries as a whole, a net economic outcome to Australia ranging from a net loss of \$1.2 billion to a net benefit of \$4.3 billion.

**Table 6: Net economic benefit of gambling to residents of NT, 2004-05, present prices**

<b>Benefit or cost</b>	<b>Low estimate (\$m) (a) (b)</b>	<b>High estimate (\$m) (a) (b)</b>
Consumer surplus to players resident in NT	41.7	91.0
Gambling taxes, fees & charges to NT Gov.	47.9	47.9
Total external costs of gambling to NT residents	8.8	27.6
Net economic benefit of gambling to NT residents	80.7	111.3

(a) Prices as at the December quarter of 2005.

(b) Table based on NT Prevalence Survey 2005 & ACIL Tasman estimates.

Source: (ACIL Tasman 2006) p.106

The main reason the economic impact of gambling in the NT was estimated to be positive by ACIL Tasman was that much gambling expenditure in the NT is sourced from outside the NT jurisdiction. As the NT exports a substantial part of its gambling services via internet gambling and sports betting, and hosts a number of overseas and interstate visitors each year, net gambling revenues were generated by both residents and non-residents. According to estimates by ACIL Tasman, over half of the benefits were contributed by non NT residents. ACIL Tasman estimated \$131.7 million of the total \$280.6 million NT gambling expenditure originating from other jurisdictions or overseas (see Table 7). However it is likely that different conclusions would arise if different sets of assumptions were made.

**Table 7: Gambling demand in NT, 2003-04, by mode of gambling & origin of player, present prices (a)**

<b>Mode of gambling</b>	<b>Expenditure by overseas players (\$m)</b>	<b>Expenditure by players in other Australian jurisdictions (\$m)</b>	<b>Expenditure by NT players (\$m)</b>	<b>Expenditure by all players (\$m)</b>
Totalisators(b)			18.1	18.1
Bookmakers (c)	3.9	24.4	7.1	35.3
Lotto games			12.3	12.3
Instant lotteries			1.5	1.5
Community gaming (d)			47.2	47.2
Casino gaming (e)	17.0	8.5	59.4	84.9
Interactive gambling	15.4			15.4
Sports betting	39.5	23.0	3.3	65.8
All gambling	75.8	55.9	148.9	280.6

(a) prices at the December quarter of 2005

(b) wagering on horse and greyhound races conducted by on-course and off-course totalisators

(c) wagering on horse and greyhound races by bookmakers

(d) gaming machines located in Pubs, taverns, bars and Hospitality clubs

(e) casino table games, gaming machines and Keno games table conducted within casinos

Source: Queensland Treasury 2005, ABS 2006 & ACIL Tasman estimates

Source: (ACIL Tasman 2006) p.25

This is not to suggest there are no social impacts associated with gambling services provided by the NT to gamblers in other jurisdictions. What this really means is the NT exports a lot of the problem gambling, and hence identifiable social costs, associated with its gambling products. As this study focuses specifically on the NT jurisdiction, these costs are effectively ignored as they lie outside the scope of the study. It is possible that gambling activity based in the NT may show a net overall economic loss if these factors are taken into account. If so, the question is raised about the extent to which the NT is responsible to individuals residing outside this geographic jurisdiction.

In addition, the net economic impact of gambling in the NT is dependant upon a range of financial assumptions, particularly the measurement of consumer surplus outlined above. One difference in the ACIL Tasman study is the exclusion of consumer surplus because of excessive expenditure by problem gamblers, which hardly reflects a net consumer benefit. If the consumer surplus is discounted due to problem gamblers gambling against their will, then the net benefit of gambling shrinks by 88% of the original estimate. This deduction was based on the estimate by the Productivity

Commission that 88% of the player expenditure by problem gamblers in Australia was excessive (ACIL Tasman 2006, xiii). The ACIL Tasman study still concludes a positive net economic benefit.

## **5.5 Issues and Uncertainties Regarding Economic Assessment**

A point made by the Productivity Commission (1999, 11.1) was that these overall estimates are limited for policy analysis because the estimates cover a wide range and may not include all impacts and costs associated with gambling. Furthermore, aggregate assessments of this type hide variations between different gambling modes. In other words, the aggregated figures mask divergent results for different gambling types.

The Productivity Commission disaggregated its overall estimates by gambling mode, and found that the net benefits varied markedly. For example, lotteries generate a relatively low social cost and provide a clear net community benefit. Poker machines, on the other hand, have the potential to, and do indeed, generate significant social costs, largely because a greater proportion of expenditure on poker machines is derived from problem gamblers in comparison to lotteries for example (Productivity Commission 1999).

To conclude, this is only one economic assessment and is not definitive. Much depends on the assessment of the level of problem gambling. The estimates used were based on the SOGS measure used by the Prevalence Survey, which is likely to represent a significant underestimation of problem gambling in the NT. This means the economic assessment would be dramatically different if the social costs of all problem gambling, both regulated and unregulated, were taken into account. It is standard practice for the Productivity Commission to submit economic reports to outside review or commission a separate analysis (Banks 2002). In this case, an external review is also recommended.

## 6. Impact of Poker Machines

### 6.1 Growth of Poker Machines

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. Total player loss on pokies in casinos increased proportionately over that period from \$28.5 to \$64.2 million. In addition, the average player loss per machine increased significantly from \$49,588 in 1996/97 to \$78,599 in 2000/01, and has remained steady since that time despite the substantial increase in the number of machines in Skycity casino.

The gambling landscape of the NT changed dramatically following the introduction of gaming machines into community venues such as pubs and clubs, 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 has doubled from 495 to 985. 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, a 64% increase.

### 6.2 Net Economic Impact of Poker Machines

Although player losses per machine appear to have reached a plateau in casinos, losses per machine appear to be continuing to rise in other venues, a trend that seems likely to continue in the immediate future. Importantly, the economic and social costs of these machines are primarily borne by NT residents. In the NT, problem gamblers were more likely to play poker machines than any other form of gambling, with 9 out of 10 problem gamblers participating (Prevalence Survey 2006). In addition, over 50% of all expenditure by problem gamblers was on poker machines, averaging an estimated \$15,800 spent on poker machines per problem gambler per year. Combined with the fact that few visitors play in community venues in comparison to other gambling modes, and that pokies are readily accessible in pubs and clubs throughout the NT, they arguably represent the largest gambling risk to NT residents.

Therefore, the economic impact assessment by ACIL was disaggregated to specifically estimate the net economic impact of poker machines in community venues. This analysis revealed that poker machines in the Territory generated an estimated net economic benefit of between \$27 million and \$36 million in 2003-04, and between \$33 million and \$44 million in 2004-05 (ACIL Tasman 2006). These results are presented in Table 8. As with the estimates for the total gambling modes, these economic impact assessments need to be interpreted with some caution and the economically unquantifiable social impacts need to be acknowledged.

**Table 8: Net economic benefit of EGM gambling to NT residents, 2004-05, present prices**

Benefit or cost	Low estimate		High estimate	
	(\$m)	(a) (b)	(\$m)	(a) (b)
Consumer surplus to EGM players resident in NT	18.7		45.8	
EGM gaming taxes, fees & charges to NT Government	21.9		21.9	
Total external costs of EGM gaming in NT	7.6		24.0	
Net economic benefit from EGM gaming	33.0		43.7	

(a) prices as at the December quarter of 2005

(b) totals may not add due to rounding

Sources: NT Prevalence Survey 2005 & ACIL Tasman estimates

### 6.3 Socio-Spatial Analysis of Player Loss Data

In order to delve more deeply into the specific social impacts of poker machines, a separate analysis was undertaken of gaming machines in community venues based on player loss data provided by the NT Treasury. This analysis was undertaken because research in other jurisdictions has found a positive relationship between numbers of machines and economic disadvantage (Productivity Commission 1999, Marshall and Baker 2001). This research has illustrated that the social impact of pokies varies from location to location, with the brunt of the effects felt in poorer areas. Regardless then of the net economic impact at the NT level, processes operate that distribute social costs of gambling unevenly across space.

The socio-spatial analysis of poker machine concentration and player loss was conducted and reported as part of the Prevalence Survey Report. This analysis tested the relationship between poker machine numbers/expenditure, and economic disadvantage at the level of the venue, the local area, and the region. From these analyses, there was no evidence to suggest poker-machines or poker-machine revenues are concentrated in areas of relative economic disadvantage. In fact, the analyses show the opposite effect. There is a slight positive relationship between poker machine activity and the relative affluence of areas in which they are located. The relationship found between poker machine gambling and poorer areas in other jurisdictions and at other scales, did *not* hold up in the NT. In fact the reverse was found, with NT poker machine gambling more concentrated in affluent areas.

It would however 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 do not display 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 in the NT 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 moving machines between venues.

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 other major Australian cities. The main effect on player loss were venue-specific factors (hotel v club; concentration of machines, and capping policy). Venue specific factors are more important in the NT than socio-economic characteristics of the areas in which the venues, and hence the machines, are located. In particular, there is a clear pattern that shows 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.

#### **6.4 Implications for Social Impact Assessment**

The previous discussion does not suggest poorer people are less likely to play poker machines, or that the social impact of poker machines are relatively benign in the NT. The results of the prevalence survey show that people on low incomes are three times as likely to be problem gamblers than the NT average, and that poker machines are played more by problem gamblers (SOGS5+) than any other gambling mode. What it does mean is that regulatory policies based on socioeconomic status of areas (eg. the Victorian Government's regional caps policy) will not be appropriate in the NT. The capping policy in the NT appears to be reducing activity in hotels and to a lesser extent in clubs. Because the number of machines is crucial (more machines equal more average revenue per machine), 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 larger clubs would benefit from increased caps. Before more definitive conclusions can be drawn and any increase in capping limits is considered, further research is needed to find out more about the patronage of venues, including client base, mobility patterns, gambler behaviours and potential problems. This work would enable the development of a sound social impact assessment mechanism that takes into account diversity of venue type. Research studies that explicitly chart the dynamics of venues and venue processes are strongly recommended.

# 7. Community Attitudes towards Gambling

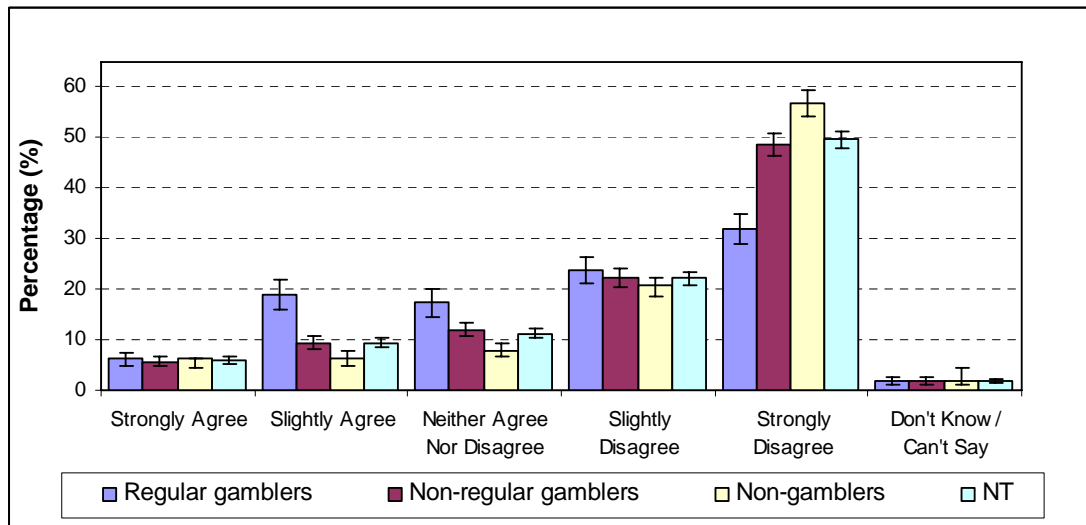
## 7.1 Attitudes towards Gambling

General attitudes to gambling within the NT community were gauged through an open ended question in the gambling prevalence survey. It is important to note the survey was disaggregated according to participant's frequency of gambling, using the categories non-gambler, non-regular gambler and regular gambler. As discussed, data gained through the survey was not disaggregated according to participants' identification as Indigenous or otherwise. Indigenous NT residents have a comparably low rate of phone access, leaving the attitudes towards gambling of remote community residents in particular largely uncharted.

In order to assess community attitudes towards gambling in the NT, a question was chosen enabling comparison with the Productivity Commission's national survey conducted in 1999. Telephone survey participants were asked the extent they agreed with the statement: 'gambling does more good than harm for the local community'. Overall 70% of the NT population disagreed with the statement. Almost half strongly disagreed with the statement, 15% agreed with the statement, and the remainder did not hold an opinion (Figure 1).

Given 73% of the NT population participate in gambling the findings reflect attitudes to gambling based upon common perceptions of the community impacts of gambling rather than individual gambling practices. There was however a tendency amongst participants who identified as non-gamblers to strongly disagree with the statement compared with regular and non-regular gamblers. Outcomes of the survey indicate the formation of attitudes based upon perceptions of the social distribution of harms associated with gambling. That is, while most people perceive gambling to offer very little in the way of community good, the majority of people gamble without serious personal adverse consequences. Severe negative consequences associated with gambling directly impact a relatively small percentage of the population. However it is evident that these negative outcomes, detectable at the community level, have influenced a large majority of the population to disagree with the statement 'gambling does more good than harm for the community'.

**Figure 1: Percentage of gambler type and their level of agreement with the statement 'that gambling does more good than harm for the local community'**



Source: NT Gambling Prevalence Survey 2005

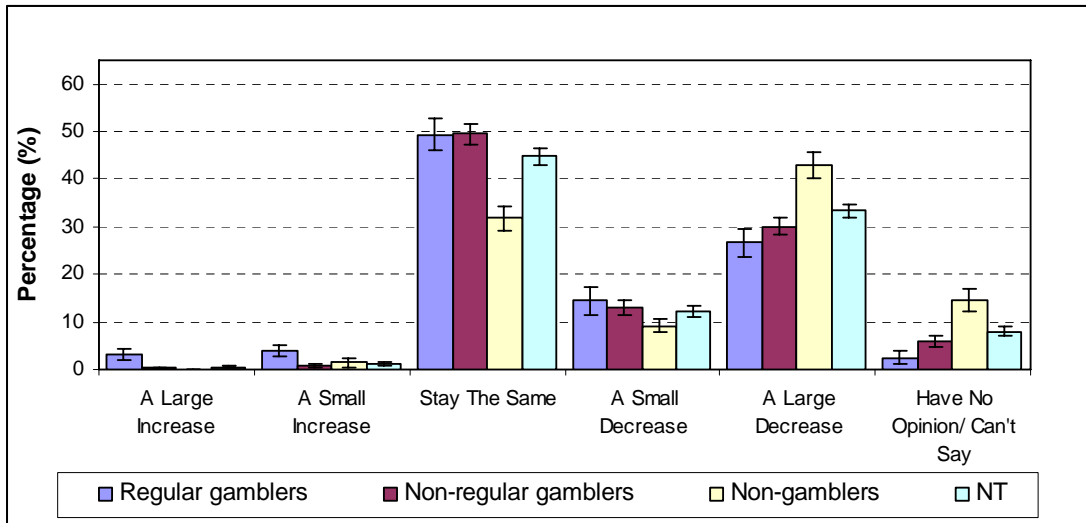
## 7.2 Attitudes towards Gaming Machines

The rapid increase in the number of gaming machines in both casinos and community venues over the last decade has perhaps created a shift towards attitudes of tolerance for this form of gambling activity amongst the gambling community and wider NT population. In order to understand current community attitudes towards gaming machines survey participants were asked if they felt the number of machines should be increased, decreased or stay the same, in respective gambling venues (Figure 2).

The survey found community opinion to be equally divided over whether the number of machines should stay the same or decrease. One-third of respondents supported a large decrease in the number of machines. Just 1.8 % of respondents supported any increase in the number of machines. Across the NT, the only noticeable regional difference in survey findings occurred in Katherine, where slightly fewer residents supported a large decrease in the number of machines, with a little more favouring a small increase. Significantly, just under 90 % of those respondents across the NT who supported a decrease, favoured a decrease in clubs and hotels. Slightly less than half favoured a decrease occurring in casinos, reflecting more tolerant attitudes towards casinos as legitimate gaming venues.

Attitudes towards the community costs and benefits of gaming machines were also gauged through the survey. Overall, it was found that perceptions of drawbacks outweighed benefits. Over 40 percent of the population felt that people were encouraged to spend more than they could afford on gambling machines. Almost one-third of respondents were concerned about the issue of people becoming addicted to playing machines. Other responses included impacts on the family including time away and child neglect, impacts on low income earners, unsociability of poker machine playing, family breakdown and domestic violence, easy accessibility, health risks through associated smoking and drinking, and a general negative societal impact.

**Figure 2 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?'**



Source: NT Gambling Prevalence Survey 2005

Benefits of gaming machines were perceived to be predominantly economic in nature, associated with revenue raised through machines. It is important to note that over one-fifth of regular gamblers and over one-quarter of non regular gamblers, as well as 40 percent of non gamblers, identified no community benefit at all flowing from poker machines. Amongst the proportion of the population that did attribute some benefit, between 15 and 20% identified increased revenues for the gaming venues. A similar proportion pointed out the benefits of increased government taxation revenue. Around 10% believed gaming revenue returned to the community in some form. Approximately 15% of gamblers suggested poker machines provide recreation and entertainment. The creation of employment opportunities, tourism and charity were also listed.

## 8. Gambling Research in the NT

### 8.1 Limitations of Contemporary Research

The existing western model for gambling research, particularly in the psychological literature that dominates gambling research, focuses on the individual gambler as the primary object of analysis. These approaches implicitly view problem gambling as one of the inevitable side-effects of commercial gambling, afflicting a small minority of individuals who would benefit from treatment by professionals. This understanding is dependant upon government and industry assistance through the provision of responsible gambling media or a range of education strategies, supported and informed by research. Within this framework, the problem is located firmly with the individual gambler who is 'at risk' or 'vulnerable', requiring agency intervention or 'treatment' of some sort. While it is important to fully understand these processes and current methods, location of the 'problem' with the individual gambler is limited because:

- A focus on the individual gambler may not be the best approach when gambling occurs in different social or cross-cultural contexts. In the NT, the Indigenous population is underrepresented by standard survey methodologies (eg. phone surveys), and gambling screens do not directly transfer outside of western contexts.
- Clinically problematising the individual diminishes the roles of other actors and institutions, including industry, government and academia that directly benefit from gambling. In other words, it implicitly supports the status quo rather than providing either socio-political critique or efforts at structural systems change or reform.
- By focussing entirely on the prevalence of problem gambling, this approach only considers one component of a much larger system, and tends to do so in isolation. Such approaches do not adequately come to terms with gambling as a contemporary social phenomenon as they overlook the social and institutional framework within which gambling occurs. As a result, they are too narrow in focus as the sole basis for building a comprehensive NT-relevant research agenda.

Concentration on the individual problem gambler at the expense of more general social and institutional processes is therefore not the most appropriate approach in the NT context. The prevalence results indicate it is difficult to specifically detail typical characteristics of problem gamblers, beyond basic variables such as income and education, largely because problem gamblers are a heterogeneous group. This suggests there is no typical problem gambler based on socio-demographic characteristics, although definite risk factors do exist.

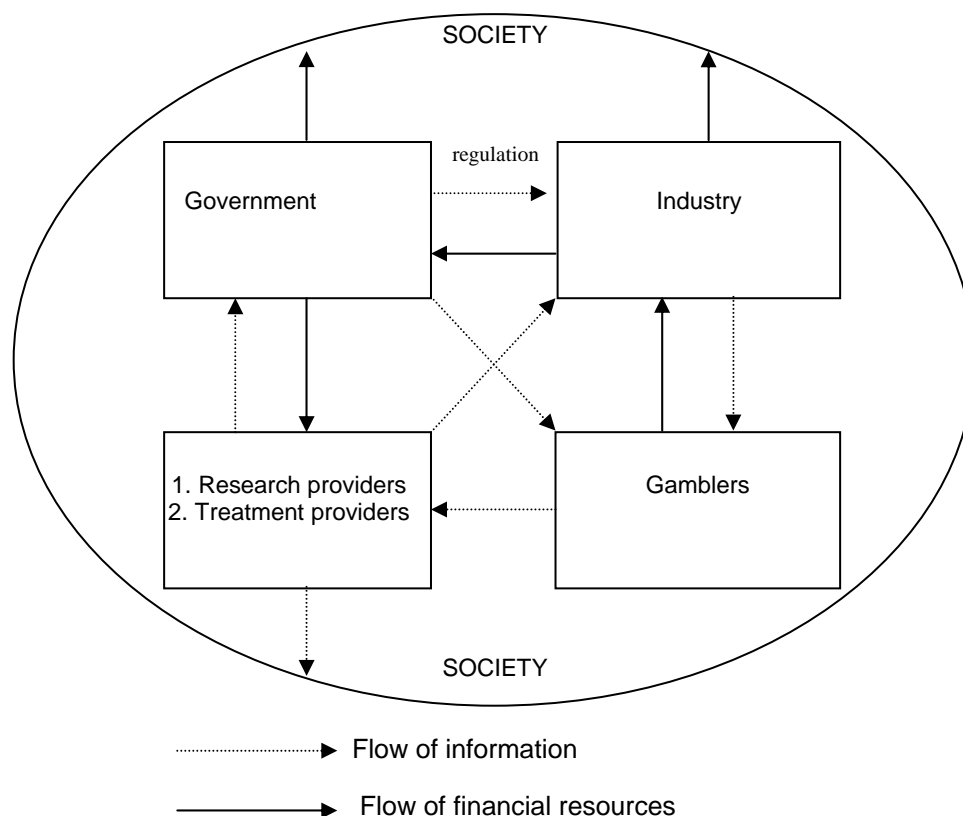
While an understanding of problem gamblers is necessary and valuable, such research may be fruitfully supplemented by an examination of the gambling system itself - the system that globally mass-produces gambling space. Gambling spaces have direct local expression, as in the case of poker machine venues in the NT. The dynamics of gambling occur in these spaces, yet extend beyond gambling access. The extent that the NT has a lower rate of problem gambling than Australia as a whole, at least as

estimated by the phone survey, is possibly related to the fact that we have fewer ‘global-casino-culture’ spaces than in other jurisdiction. In other words, problem gambling may reside more in the ‘global-local’ nexus than in the individual. From this perspective, research attention needs to start critically exploring the globalising forces of consumption of which gambling is one expression. The current document seeks advance this agenda by suggesting a more meaningful framework for conceptualising gambling as a contemporary social practice. This framework may also be used to structure a comprehensive research framework.

## 8.2 Suggested Framework for Gambling Research in the NT

Gambling research in the NT would benefit from a systems approach in order to add value to ‘gambler-based’ research and its results, thus enabling development of the greatest possible understanding of gambling from individual pieces of work that focus on the gambler, such as the Prevalence Survey. A systems approach attempts to consider all the actors involved with gambling and how they interrelate. It is useful, in this context, to conceptualise gambling as a broader institutional system, incorporating several key actors which include government, industry, the social service sector, academia/researchers, and gamblers themselves (see Figure 3). As the this simple diagram illustrates, resources (money) circulate from the gamblers through the system. Industry, government, social services and academia are all beneficiaries. In exchange, industry provides gambling services, in-house regulation and revenue for club expenditure. The social services sector provides treatment and counselling services, government regulates industry, and researcher providers (public and private) attempt to inform government, industry and society at large.

**Figure 3: A simple conceptual model of the gambling system**



In a practical sense this systems approach may be used to frame the research program CDU is building. It may be used to (a) designate the scope and relation of various research projects, and (b) conceptually enable a critical systems/institutional analysis approach. Research projects ideally need to illustrate what component of the system they are looking at, and how they will operationalise the links between that project and the broader system they are seeking to understand. This would include critical studies that analyse the roles of particular research/disciplinary perspectives. These perspectives will provide the rationale for the work that is actually undertaken.

To locate research projects in a systemic context, the components at various scales may be usefully considered in a gambling research matrix (see Table 9). This includes scale on the vertical (international – national – NT – region – city – sites) and system components on the horizontal (gamblers, industry, government, and intervention). The scale linkages reflect the global-local structure of the gambling industry. The component linkages reflect the key institutions and processes within this system: gamblers; industry; government and intervention, illustrated above in Figure 3. Ideally, research would be conducted in all of these areas. CDU research has completed work in some of these, as indicated on the matrix (Table 9). The question marks represent cells in the matrix that remain unexplored in the NT context (Table 9).

This is not to suggest research funded by the NT should cover all of these areas in depth. Some areas will be of more relevance to the NT, particularly Indigenous gambling, and most resources should be diverted to this area. It is equally clear that gambling impacts and processes at the local level require exploration. Such studies are necessary to meaningful local impact assessment and policy advice and formation. The matrix indicates the realms affecting gambling in the NT. Many of these need to be considered by genuine research projects. The argument forwarded here is that only through understanding the broader system, its rationale and logics, can meaningful intervention by government and service providers, and social action, be more widely effective.

**Table 9: Gambling Research Matrix**

	<b>Gamblers</b>	<b>Industry</b>	<b>Govt/policy</b>	<b>Intervention services</b>
<b>International</b>	????	????	????	????
<b>National</b>	????	????	????	????
<b>Northern Territory</b>	Prevalence study  Indigenous gambling study	Economic Impact assessment  Socio-spatial analysis of poker machines	Socio-spatial analysis of poker machines	????
<b>Region</b>	Prevalence study	Socio-spatial analysis of poker machines	????	????
<b>City/Town</b>	????	????	????	????
<b>Site/Venue</b>	????	????	????	????

### 8.3 Suggested Areas of Research

In terms of requirements to progress this general research agenda, many suggestions have been made individually by the prevalence and Indigenous gambling reports. These are reproduced in turn below. However, some general points need to be made before presenting the more detailed list of recommended research projects. These general points help to map some core research directions, which may be meaningfully placed within the framework suggested previously.

First, the development of a systems approach to gambling research is, in itself, a substantial piece of work. However such theoretical or conceptual development is necessary if research is to move beyond an incremental, essentially *ad hoc*, approach. The sections above are essentially indicative. They do not develop a systems framework in themselves. The main point to make is that the activity of gambling fulfils a functional role within formalised social and institutional frameworks. A critical analysis of this framework is the first step in moving beyond concern with just the individual problem gambler, towards an understanding of the social processes and institutions that define and perpetuate gambling in a particular way, that is, as a form of entertainment or consumer benefit that can have unfortunate, but largely unavoidable, social costs. This type of analysis would be well suited to a PhD project, and consideration could be given to establishing several longer term projects, such as the ARC Linkages Project on Indigenous gambling, jointly undertaken by CDU and NT Treasury.

Second, the three studies (ie. the prevalence study, the scoping study of Indigenous gambling, and the economic impact study) have identified important areas that are incompletely or totally unstudied. As a result, there are several priority areas identified below worthy of further research that would usefully form the components of a longer term research agenda, and which may be considered within the funding cycle of the CBF. The following section lists core research areas identified by this overview, development of which requires substantial further input. A more detailed discussion of research projects emanating from the prevalence and Indigenous gambling studies are provided in sections 8.5 and 8.6 respectively.

### 8.4 Core Future Research Areas

- Indigenous people (both remote and urban) and gambling is the priority area for research. Little is known of the issues associated with gambling by Indigenous residents or how to address these issues, particularly the relationships between card playing and poker machines/casinos.
- Significant further analysis on the prevalence and player loss data sets.
- Studies of venues, including the casinos, are required in order to examine the size and shape of venue catchments, the nature of social impacts (both positive and negative), and how these impacts are spatially distributed.
- Assessment of the consequences of excessive gambling on particular vulnerable groups (eg. poker machine players and their families with low incomes and formal education).
- An exploration of the relationships between gambling and mobility, particularly examining non-residents and itinerant gambler groups.
- Impacts of Territory-based gambling on non-residents.

- Analysis of policies, regulations, and intervention frameworks existing elsewhere and how these may provide lessons for gambling regulation in the NT. This may incorporate research into intervention programs to reduce problem gambling and associated impacts, including evaluations of intervention programs.
- A comparative analysis of the NT gambling policy framework.

More detailed suggestions for further research projects or areas of study are presented below in two sections. The first presents further research suggested by the prevalence report, while the second presents some research areas flowing from the Indigenous gambling scoping study.

## **8.5 Research Areas Specific to Gambling Prevalence**

### ***8.5.1 Time-series (longitudinal) research***

No single study will provide a comprehensive analysis on the variety of contemporary gambling behaviours and their implications. Continued research into the patterns of gambling, in order 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. 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 also be useful in a technical sense as 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 would also be valuable 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 2005 NT Gambling Prevalence Survey was restricted to the adult population, of particular value would be longitudinal work with young people (aged below 18 years) in order 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 that explores their history in order to identify the most significant events and factors on route to becoming a problem gambler. 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 by matching (age and sex) with a group of known controls (non-problem regular gamblers). The histories, behaviours and underlying characteristics of the cases and controls are recorded through interviews or other means and analyses are undertaken in order 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 makes the difference between possible and impossible research.

### ***8.5.2 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 such as boarding houses, retirement homes, and military barracks). The under-enumeration of Indigenous people in particular is an important issue in the population prevalence survey, as it limits what can be said about the prevalence of gambling and problem gambling in the Indigenous population, comprising 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.

Information is desperately needed on the gambling practices and associated social implications for the wider Indigenous population (more research suggestions are outlined in the following section on Indigenous gambling research). 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. This is partly because traditional, western survey methodologies have proven inappropriate for use in Indigenous communities (Dickerson 1996), and because Indigenous gambling primarily centres around card gambling rings located outside of formal western gambling spaces. 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 in part an explanation for the provision of conflicting results between the SOGS and CPGI in profiling problem gamblers. Research is therefore needed in order 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 different conceptions of 'gambling' as distinct sets of social practices are to be understood for the NT Indigenous population. Despite the importance of card games operating outside formal western gambling spaces and outside mainstream venues, it is also clear that Indigenous people 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. Further research is needed in order to answer these questions. A specific set research projects relevant to Indigenous people and gambling is presented in Section 8.6.

### ***8.5.3 Gambling practices of particular subgroups***

As pointed out above, the prevalence 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 explore 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.

### ***8.5.4 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 possess that may be used to identify them reliably as a group. Such an understanding would enable the tailoring of particular policies and interventions in order 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 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 including monitoring and evaluation programs.

Socio-psychological studies specifically on problem gamblers may be a useful addition to the 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 gaming behaviours.

#### ***8.5.6 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 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 the analysis of the Treasury player loss data show that higher player loss occurs in areas of greater economic wealth as measured by the SEIFA index. However, this does not mean 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 a more accurate gauging of social impacts 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 amongst the Indigenous population.

An understanding of 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, as 80% of Indigenous people are residents of remote communities or small towns that have only a few, if any, licensed venues. 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 exposed to globalised gambling culture. More suggestions are provided in the following section about the relationships between Indigenous people and gambling venues, particularly casinos.

### ***8.5.7 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. highly 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 substantially differ between different sections of the NT community and are therefore unpredictable. Research to explore the possibly very specific consequences of gambling in different sections of the Territory community is 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.

### ***8.5.8 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. 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 damaging gambling behaviour.

As indicated elsewhere, the Territory's population is different to other jurisdictions. A systematic study exploring awareness-raising strategies used elsewhere, considering 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. For example, are venues playing an effective, if any, role in awareness raising or intervention in the Territory? Are some venues more effective in this endeavour than others? What lessons can be learned from leaders in this effort, either in the NT or elsewhere, which might be adapted more broadly in the NT?

In a long-term strategic sense, the prevalence survey found that education level was one of the main socio-demographic variables correlating 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 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 secondary school education, strongly suggests 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 adopted in other parts of Australia and overseas. The proposed project may examine which interventions may be appropriate (both culturally and demographically) for 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 have been effectively charted. The challenge now remains to build on this platform in order to convert these results into meaningful policy responses addressing the issues raised.

## **8.6 Research Areas Specific to Indigenous Gambling**

The first point to make is that the Indigenous gambling scoping study was limited to the perspective of employees of Aboriginal Medical Services. It presents one particular viewpoint, one which is not necessarily reflective of gamblers' experiences themselves (although some staff obviously do gamble and thus present a dual perspective). Therefore, a general point to make is that research with Indigenous gamblers needs to be conducted as a matter of some urgency. The scoping study by McDonald and Wombo (2006) has pointed out some directions which may be fruitfully explored in this sense, and these are reproduced in the sections below. More information on Indigenous gambling is contained in the accompanying report *Indigenous Gambling Scoping Study – A Summary*.

### **8.6.1. Gambling practices**

An investigation of Indigenous gambling needs to include the diversity of contemporary Indigenous gambling practices and be systematic in the exploration of the psychological, social and economic issues associated with these practices. As such, the gambling practices of women, men and young people needs to be examined in relation to salient community issues. An important issue identified by the scoping study was the primary responsibility Indigenous women have for the sustenance and welfare of their families, and hence their towns and communities. In the 1980s, middle-aged women were the most skilled, dedicated and successful gamblers in Northern Territory communities. Their success in community card games contributed to proficient household management (Goodale 1987). Today, when more Indigenous women engage in regulated gambling, research could usefully examine if Indigenous women are still considered successful gamblers and if their gambling success continues to translate into proficient household management.

In contrast, traditionally, the interests and abilities of Indigenous men were dedicated to an arena outside the family and household. They manufactured objects for long distance trade and invested time and effort in ceremonial activities that generated alliances with more distant groups. This required entrepreneurial and diplomatic skills, that is, the ability to control and distribute resources and to manage ritual connections and kinship obligations. Men tended to be more interested in card games when there was big money in the communities, and spent their winnings on prestige items. In this respect, future research could explore the contemporary gambling practices of Indigenous males and if it is classified as successful practice in terms of their aspirations and goals that translate into community empowerment and community development.

Traditionally, Indigenous children were taught to be self-reliant and physically autonomous from an early age. Children accompanied adults on their daily rounds, and learned by observation and imitation, and by trial and error. They were warned about, but not physically protected from, dangers once they reached a certain age.

Today, Indigenous children still learn by observation and imitation, and by trial and error. Children imitate adult card games and learn to gamble while young. Many parents do not necessarily see themselves as role models to their children. For example, it was reported by one individual that when their children humbug them for money, “they tell their children to make their own money by gambling and selling marijuana” (staff member, health). While this is the opinion of one staff member, the issue of the role of gambling in child development is salient and general. In this context, future research that determines if gambling practices interfere with cultural transfer, schooling, and the ability of young people to develop and thrive in the contemporary world would be useful.

### **8.6.2. Casino study**

It is evident that Indigenous people are a substantial customer group of the Territory’s two casinos. A casino study designed to understand the attraction that casinos hold for local Indigenous people, particularly for Indigenous women (Foote 1992), would explain visitation patterns. Study would incorporate an examination of both the benefits and costs of this patronage. For example, Bunkle and Lepper (2002) suggest poker machine venues could be viewed as equal opportunity facilities. Indigenous people may look for acceptance from the wider community and may seek the same pleasures as non-Indigenous people. In addition, women’s poker machine gambling may be viewed as a form of escape from an excess of relational demands (Schull 2002). There may also be a connection between Indigenous women’s primary responsibility for household sustenance and their use of poker machine gambling as an escape mechanism. Research could also explore the relationship between casino gambling and social inclusion; and between living stresses on urban women and potential subsequent dissociation through casino gambling.

Research of this sort may be feasible in partnership with an Aboriginal Social and Emotional Wellbeing Centre. Interviews with Indigenous patrons would illuminate their relationship with the casino and with poker machine gambling. The research could extend to Indigenous relationships with other organisations in town. Areas of focus could include women’s responsibilities and duties at work, home, and the wider community, including the support women receive from spouses and extended family. Such a project would also document the frequency and duration of casino gambling; money expenditure; relationships with casino staff; knowledge of poker machine psychology, and other work and leisure activities that people engage in.

### **8.6.3. Indigenous psychologies**

In terms of moving beyond the individualistic focus on the gambler, research that explores non-western ways of thinking and being in relation to gambling is necessary. Kim and Park (2005) point out western psychological theories that emphasize individualistic values (for example, innate ability, intrinsic interest, and self-esteem) cannot explain behavioural competence and personal achievement in East Asian countries. In non-atomistic models of human agency, relationship with others always mediates individual action and obligation. As a consequence, non-western psychologists have been engaged for a number of years in decolonising psychology and developing Indigenous psychologies (Sinha 1990; Kim and Berry 1993; Yang and Hwang 2000). According to these theories, notions of social, relational, and family efficacies need to be developed in order to facilitate behavioural change in collectivist or relational cultures. A study of Australian Indigenous psychologies (in relation to

Indigenous gambling and parenting skills) would usefully be conducted with Indigenous psychiatrists, psychologists, and other health professionals. An outcome of this research would be the development of parenting programs which work with Indigenous family structures and child-rearing practices, in order to help children develop the ability to thrive in the contemporary world and avoid the pitfalls of excessive gambling and other potentially harmful practices. Mentoring programs could correspondingly be developed in order to broaden horizons of young people, empower individuals to make life choices benefiting themselves and their families.

#### ***8.6.4. Policy and intervention***

A point made clear in the scoping study was that gambling is related closely to other social issues and problems in Indigenous communities. Therefore, policy and intervention relating to gambling must consider relationships between gambling and other forms of malaise, including violence, alcohol and drug abuse. In order to develop the necessary understanding of the relational links between gambling and other problematic behaviours, a study exploring the nature of these links within a particular community setting is necessary. An anthropological study into normative beliefs, values and behaviours that gauges the role and meaning of gambling for Indigenous people, including the extent to which gambling is problematised within communities, would provide a useful basis from which to evaluate the appropriateness, relevance, and effectiveness of existing government and community regulatory mechanisms. This research would be able to suggest more effective and appropriate regulatory frameworks. Research of this sort would benefit from a concurrent comparative analysis of existing NT policy and legislative frameworks that directly or indirectly affect gambling patterns, including the consequences of problem gambling, within both Indigenous communities and urban centres. In a research capacity context the Centre for Remote Health based in Alice Springs has offered its partnership to future CDU projects in this area, affording increased local ability to engage with the relations between gambling and other social problems. This could be usefully supplemented with an analysis of the 2002 NATSISS data exploring correlates with household gambling problems.

#### ***8.6.5. Financial and gambling literacy***

Some service agency staff interviewed as part of the scoping study emphasized the importance of financial literacy as a deterrent to problem gambling. As a case in point, the Multicultural Centre at Coober Pedy employs a financial counsellor who teaches money management skills to an Indigenous women's group. The program has met with moderate success (Kinsella and Carrig 1997). Other service agency staff suggested that financial literacy combined with gambling literacy would more positively affect excessive gamblers. These reports suggest that partnerships consisting of service agencies and community representatives may be developed to produce effective and culturally appropriate Indigenous gambling intervention services.

This type of applied intervention work could potentially be interwoven into more traditional research projects. For example, a study, conducted in partnership with Indigenous community-controlled organisations could be carried out in order to determine the flow of income in and out of Indigenous communities. This research would be used to transfer research skills to Indigenous people selected by the

communities involved in the research program. A money management program and a gambling literacy program may also be effectively attached such a research program. Research questions could include: how much money comes into communities? Where is money spent in communities? How much money is spent in the store? How much money is spent in card rings? How much money is spent in casinos? How much money goes out of the country (via casinos)? Are some families consistent winners and some consistent losers? Community representatives would also be provided with support in order to interpret results of the research and to develop relevant community programs in accord with best practice participatory methodology. Community councils would then be equipped to recognise community gambling problems and supported to make innovative changes. For example, groups could decide upon designated days and times for community card games. Supportive programs may also include diversionary programs, life skills and life planning programs in areas where gambling is recognised as being particularly problematic. The point of work such as this would be to bring together research, community practice and action, to both provide information, and to simultaneously improve community-based decision making.

#### ***8.6.6. Help seeking behaviours***

McCabe (in Banks and Fitzgerald 1999) pointed to the shame experienced when money is lost through gambling, which may prevent many people from accessing financial counselling services. This work found that Indigenous people in the study were embarrassed to talk about their gambling problems, with some attempting to conceal from others the impacts of excessive gambling on their families. Service agency staff interviewed in the Indigenous gambling scoping study expressed similar views. For example, two responses were... “It’s a shame job to get counselling for this sort of thing. Most people only go to counselling when they are ordered to” (mental health worker), and “People are shame to talk about gambling as a problem at our Social and Emotional Wellbeing Centre” (Indigenous counsellor).

A research project designed to understand specific Indigenous help seeking behaviours in relation to problem gambling and financial hardship would therefore be useful. The research could be conducted in partnership with a financial counselling service with Indigenous clientele. The research would explore the relationship between ‘shame’ and specific Indigenous help seeking behaviours. Project questions may include: do people recognise that gambling contributes to financial problems? When people experience problems with gambling, who do they turn to for help? What kinds of service agencies are people most comfortable engaging with and why? Research tracing the network of service organisations and community groups, as well as self-described approaches and assessments, would form the basis of comparative analysis relating to degrees of success or failure of tried approaches. A study of this type would extend understandings on effective forms of gambling intervention and counselling appropriate to Indigenous circumstances.

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