

# SUMMARY

OF BASIC DATA ON FROM THE NATIONAL URBAN  
PREVALENCE STUDY OF GAMBLING BEHAVIOUR  
(NUPSGB)



NATIONAL  
**Responsible  
Gambling**  
PROGRAMME



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**The Research Division of the  
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The NUPSGB is based on face-to-face interviews, conducted in November and December 2008, with 3,000 adults, randomly drawn from the census of households, in the Johannesburg, Tshwane, Cape Town and eThekweni (Durban) metropolises. Previous reports derived from the study analyzed data for Gauteng and Cape Town separately. In this report we cross-tabulate and analyze the aggregate national data.

**The total number of people interviewed was 3,000.** Each subject was taken through a questionnaire that solicited information on personal and household demographics in 17 response categories, and information on gambling participation, expenditure and attitudes in 42 response categories. Subjects also completed a battery of standard instruments: the Problem Gambling Severity Index (PGSI) (the scored module of the Canadian Problem Gambling Index), the Gambler's Anonymous 20 questions, the Beck's Depression Inventory, the Beck's Anxiety Inventory, the Barrett's Impulsivity Scale, and the World Health Organization screen for alcohol and illicit drug use and dependency. Subjects gave written voluntary consent to being interviewed. Those who declined were replaced by a random draw from within their census area.

The survey instrument is attached as Appendix A.

The reader who wishes to move straight to the general conclusions of the report will find them on the final page.

The PGSI was administered only to subjects who reported having participated in gambling. **43% of the sample reported that they have never gambled.** The remaining respondents were sorted by the PGSI into four categories: (1) no risk for problem gambling; (2) low risk for problem gambling; (3) moderate risk for problem gambling; and (4) high risk for problem gambling. **36% of the sample gamble but show no measured risk for problem gambling. 3% show a high risk for problem gambling.** The risk for problem gambling is lowest in Tshwane / Pretoria (one third of national prevalence) and highest in the West Rand (more than double national prevalence). Johannesburg (including Soweto) also shows a rate of high risk for problem gambling that markedly exceeds the national urban average. Prevalence in Durban is one-third lower than the national urban average.

As we will discuss in greater detail in the Conclusion of the present report, South Africa's cities exhibit heterogeneous gambling cultures. The picture of gambling and problem gambling behaviour that we found differs particularly strikingly as between three clusters: (1) Johannesburg / Soweto / East and West Rand; (2) Cape Town; and (3) Tshwane / Durban. Summarizing drastically, problem gambling in the first cluster is concentrated among people who mainly play dice and card games for money in informal establishments (especially shebeens), and fafi / iChina; problem gambling in Cape Town is mainly observed among poorer people who buy more scratch card and lucky draw tickets than their tiny household budgets can bear; finally, problem gambling patterns in Tshwane and Durban more closely resemble those familiar from studies in Northern countries, with low prevalence rates dominated by employed people in their 20s and 30s.

In consequence of this heterogeneity, our models of the national data in some respects fail to tell as clear a story as the models we have separately tested for Gauteng and Cape Town in previous reports. On the other hand, the larger number of observations entering into our analysis at the aggregate level entails that our slightly fuzzier conclusions are more likely to generalize beyond our study sample. This reflects a basic and pervasive trade-off in survey-based social science research.

PROVINCE - GAMBLING SEVERITY							
Province	Categories	No gambling	No risk	Low risk	Moderate risk	Problem gambling	Total
<b>Cape town</b>		347	231	43	19	20	660
Row %		53%	35%	7%	3%	3%	100%
Col %		27%	22%	14%	8%	21%	22%
<b>Durban</b>		225	264	60	41	10	600
Row %		38%	44%	10%	7%	2%	100%
Col %		17%	25%	19%	18%	10%	20%
<b>Johannesburg including Soweto</b>		232	191	87	59	28	597
Row %		39%	32%	15%	10%	5%	100%
Col %		18%	18%	28%	26%	29%	20%
<b>Tshwane/Pretoria</b>		207	172	30	15	6	430
Row %		48%	40%	7%	3%	1%	100%
Col %		16%	16%	10%	7%	6%	14%
<b>West Rand</b>		35	49	25	10	11	130
Row %		27%	38%	19%	8%	8%	100%
Col %		3%	5%	8%	4%	11%	4%
<b>East Rand</b>		245	167	65	84	22	583
Row %		42%	29%	11%	14%	4%	100%
Col %		19%	16%	21%	37%	23%	19%
<b>Total</b>		1,291	1,074	310	228	97	3,000
Row %		43%	36%	10%	8%	3%	100%
Col %		100%	100%	100%	100%	100%	100%

Subjects were asked about the settings in which they gamble. For purposes of analysis, we have categorized responses as in the table below. Its columns should be interpreted as follows:

**Casino:** respondents gamble only in legal casinos.

**Other legal:** respondents gamble only in legal venues other than casinos (e.g., race tracks, electronic gambling machines in cafes).

**Informal:** respondents gamble only in informal venues.

**None:** respondents do not go to gambling settings: they do not gamble at all, or they play only lottery and / or scratch cards and / or gamble on the Internet.

**All legal:** respondents gamble in casinos and in at least one other type of setting, but do not gamble in any informal venues.

**Other legal and informal:** respondents gamble in a mix of legal and informal types of setting, but not in legal casinos.

**Casinos and informal:** respondents gamble in legal casinos and in informal settings, but not in other legal settings.

**All:** respondents gamble in informal settings, legal casinos, and in at least one other legal setting.

PROVINCE - GAMBLING LOCATION									
Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Province</b>									
<b>Cape town</b>	35	14	59	510	4	14	15	9	660
Row%	5%	2%	9%	77%	1%	2%	2%	1%	100%
Col%	17%	19%	16%	24%	14%	25%	21%	20%	22%
<b>Durban</b>	66	20	61	398	15	11	20	9	600
Row%	11%	3%	10%	66%	3%	2%	3%	2%	100%
Col%	32%	27%	16%	19%	54%	19%	28%	20%	20%
<b>Johannesburg including Soweto</b>	38	15	98	402	2	11	16	15	597
Row%	6%	3%	16%	67%	0%	2%	3%	3%	100%
Col%	18%	21%	26%	19%	7%	19%	23%	33%	20%
<b>Tshwane/Pretoria</b>	33	11	43	320	5	4	11	3	430
Row%	8%	3%	10%	74%	1%	1%	3%	1%	100%
Col%	16%	15%	11%	15%	18%	7%	15%	7%	14%
<b>West Rand</b>	17	3	14	91	0	2	1	2	130
Row%	13%	2%	11%	70%	0%	2%	1%	2%	100%
Col%	8%	4%	4%	4%	0%	4%	1%	4%	4%
<b>East Rand</b>	17	10	101	422	2	15	8	8	583
Row%	3%	2%	17%	72%	0%	3%	1%	1%	100%
Col%	8%	14%	27%	20%	7%	26%	11%	17%	19%
<b>Total</b>	206	73	376	2143	28	57	71	46	3000
Row%	7%	2%	13%	71%	1%	2%	2%	2%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

7% of the sample gamble only in legal casinos. 13% gamble only in informal venues. 2% gamble both informally and in legal casinos. 71% do not go to gambling settings. This includes a group of 23% (of the total sample) who play only lotteries. The West Rand and Durban are unique in showing slightly higher proportions of legal casino gamblers than of informal gamblers. The East Rand shows the highest predominance of informal over legal casino gamblers (17% versus 3%). The coincidence of comparatively high rates of casino patronage and comparatively high rates of problem gambling in the West Rand might seem to indicate that easy access to legal casinos is a strong risk factor for problem gambling (though the prevalence of high risk for problem gambling in our Durban sub-sample is 1% below the overall prevalence). As we will indicate below, our other data do not support this interpretation, and indeed directly conflict with it.

We gathered information about respondents' socio-economic status through a range of questions, including direct questions about personal and household income. Many respondents refused to answer the direct questions, many others were unsure of their incomes, and still others provided answers which fit awkwardly with their responses to questions about expenditures. In our opinion, the survey category that provided the most reliable indicator of SES was 'type of dwelling'. (Interviews were conducted at respondents' homes, so this information was noted directly by survey staff.)

## TYPE OF DWELLING - GAMBLING SEVERITY

Categories	No gambling	No risk	Low risk	Moderate risk	Problem gambling	Total
<b>Type of dwelling</b>						
<b>Shack, not in a backyard</b>	198	113	60	39	16	426
Row%	46%	27%	14%	9%	4%	100%
Col%	15%	11%	19%	17%	16%	14%
<b>Shack in a backyard</b>	41	28	14	10	2	95
Row%	43%	29%	15%	11%	2%	100%
Col%	3%	3%	5%	4%	2%	3%
<b>Caravan or mobile home</b>	1	0	0	0	0	1
Row%	100%	0%	0%	0%	0%	100%
Col%	0%	0%	0%	0%	0%	0%
<b>Traditional hut</b>	1	0	0	0	0	1
Row%	100%	0%	0%	0%	0%	100%
Col%	0%	0%	0%	0%	0%	0%
<b>Matchbox-type house</b>	128	94	42	56	22	342
Row%	37%	27%	12%	16%	6%	100%
Col%	10%	9%	14%	25%	23%	11%
<b>Improved matchbox-type house</b>	101	73	29	22	13	238
Row%	42%	31%	12%	9%	5%	100%
Col%	8%	7%	9%	10%	13%	8%
<b>Suburban-type house</b>	512	467	77	44	16	1116
Row%	46%	42%	7%	4%	1%	100%
Col%	40%	43%	25%	19%	16%	37%
<b>Second house/Cottage</b>	9	7	7	1	0	24
Row%	38%	29%	29%	4%	0%	100%
Col%	1%	1%	2%	0%	0%	1%
<b>Granny flat</b>	10	12	2	1	1	26
Row%	38%	46%	8%	4%	4%	100%
Col%	1%	1%	1%	1%	1%	1%
<b>Garage/modified garage</b>	18	22	8	10	0	58
Row%	31%	38%	14%	17%	0%	100%
Col%	1%	2%	3%	4%	0%	2%
<b>Rondavel/Zozo hut</b>	6	4	1	0	0	11
Row%	55%	36%	9%	0%	0%	100%
Col%	0%	0%	0%	0%	0%	0%
<b>Part of a house</b>	6	3	1	1	1	12
Row%	50%	25%	8%	8%	8%	100%
Col%	0%	0%	0%	0%	1%	0%
<b>Townhouse or cluster house</b>	39	28	7	2	1	77
Row%	51%	36%	9%	3%	1%	100%
Col%	3%	3%	2%	1%	1%	3%
<b>Semi-detached or joint house</b>	49	62	11	7	3	132
Row%	37%	47%	8%	5%	2%	100%
Col%	4%	6%	4%	3%	3%	4%
<b>Unit in a block of flats</b>	93	110	17	11	5	236
Row%	39%	47%	7%	5%	2%	100%
Col%	7%	10%	5%	5%	5%	8%
<b>RDP house</b>	74	45	33	24	17	193
Row%	38%	23%	17%	12%	9%	100%
Col%	6%	4%	11%	11%	18%	6%

## TYPE OF DWELLING - GAMBLING SEVERITY (continued)

Categories	No gambling	No risk	Low risk	Moderate risk	Problem gambling	Total
<b>Type of dwelling</b>						
<b>Hostel/Compound</b>	0	1	0	0	0	1
Row%	0%	100%	0%	0%	0%	100%
Col%	0%	0%	0%	0%	0%	0%
<b>Hotel/Boarding house</b>	0	1	0	0	0	1
Row%	0%	100%	0%	0%	0%	100%
Col%	0%	0%	0%	0%	0%	0%
<b>Other</b>	5	4	1	0	0	10
Row%	50%	40%	10%	0%	0%	100%
Col%	0%	0%	0%	0%	0%	0%
<b>Total</b>	1291	1074	310	228	97	3000
Row%	43%	36%	10%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

We found risk of problem gambling to be highest among people who live in matchbox-type houses and RDP houses. Risk of problem gambling falls relative to province-wide and national rates among people living in all other types of dwellings, including both shacks and suburban-type houses, where total category numbers were large enough to be meaningful. Thus risk for problem gambling appears to be associated with being poorer than the provincial and national averages, but better off than the poorest groups who do not live in permanent dwellings.

## TYPE OF DWELLING - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Type of dwelling</b>									
<b>Shack, not in a backyard</b>	17	6	73	310	0	9	8	3	426
Row%	4%	1%	17%	73%	0%	2%	2%	1%	100%
Col%	8%	8%	19%	14%	0%	16%	11%		
<b>Shack in a backyard</b>	1	1	18	67	0	4	2	2	95
Row%	1%	1%	19%	70%	0%	4%	2%	2%	99%
Col%	0%	1%	5%	3%	0%	7%	3%	4%	3%
<b>Caravan or mobile home</b>	0	0	0	1	0	0	0	0	1
Row%	0%	0%	0%	100%	0%	0%	0%	0%	100%
Col%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>Traditional hut</b>	0	0	0	1	0	0	0	0	1
Row%	0%	0%	0%	100%	0%	0%	0%	0%	100%
Col%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>Matchbox-type house</b>	7	8	64	238	1	12	6	6	342
Row%	2%	2%	19%	70%	0%	4%	2%	2%	100%
Col%	3%	11%	17%	11%	4%	21%	8%	13%	11%
<b>Improved matchbox-type house</b>	13	3	42	168	3	5	3	1	238
Row%	5%	1%	18%	71%	1%	2%	1%	0%	100%
Col%	6%	4%	11%	8%	11%	9%	4%	2%	8%
<b>Suburban-type house</b>	118	26	85	805	17	11	32	22	1116
Row%	11%	2%	8%	72%	2%	1%	3%	2%	100%
Col%	57%	36%	23%	38%	61%	19%	45%	48%	37%
<b>Second house/Cottage</b>	2	1	6	13	0	0	2	0	24
Row%	8%	4%	25%	54%	0%	0%	8%	0%	100%
Col%	1%	1%	2%	1%	0%	0%	3%	0%	1%

## TYPE OF DWELLING - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Type of dwelling</b>									
<b>Granny flat</b>	3	0	2	20	0	0	0	1	26
Row%	12%	0%	8%	77%	0%	0%	0%	4%	100%
Col%	1%	0%	1%	1%	0%	0%	0%	2%	1%
<b>Garage/modified garage</b>	1	0	9	46	0	0	0	2	58
Row%	2%	0%	16%	79%	0%	0%	0%	3%	100%
Col%	0%	0%	2%	2%	0%	0%	0%	4%	2%
<b>Rondavel/Zozo hut</b>	0	1	1	9	0	0	0	0	11
Row%	0%	9%	9%	82%	0%	0%	0%	0%	100%
Col%	0%	1%	0%	0%	0%	0%	0%	0%	0%
<b>Part of a house</b>	1	0	2	8	0	1	0	0	12
Row%	8%	0%	17%	67%	0%	8%	0%	0%	100%
Col%	0%	0%	1%	0%	0%	2%	0%	0%	0%
<b>Townhouse or cluster house</b>	8	2	4	60	2	0	1	0	77
Row%	10%	3%	5%	78%	3%	0%	1%	0%	100%
Col%	4%	3%	1%	3%	7%	0%	1%	0%	3%
<b>Semi-detached or joint house</b>	10	6	18	84	2	6	4	2	132
Row%	8%	5%	14%	64%	2%	5%	3%	2%	100%
Col%	5%	8%	5%	4%	7%	11%	6%	4%	4%
<b>Unit in a block of flats</b>	21	15	14	163	1	5	11	6	236
Row%	9%	6%	6%	69%	0%	2%	5%	3%	100%
Col%	10%	21%	4%	8%	4%	9%	15%	13%	8%
<b>RDP house</b>	4	4	36	140	2	4	2	1	193
Row%	2%	2%	19%	73%	1%	2%	1%	1%	100%
Col%	2%	5%	10%	7%	7%	7%	3%	2%	6%
<b>Hostel/Compound</b>	0	0	0	1	0	0	0	0	1
Row%	0%	0%	0%	100%	0%	0%	0%	0%	100%
Col%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>Hotel/Boarding house</b>	0	0	0	1	0	0	0	0	1
Row%	0%	0%	0%	100%	0%	0%	0%	0%	100%
Col%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>Other</b>	0	0	2	8	0	0	0	0	10
Row%	0%	0%	20%	80%	0%	0%	0%	0%	100%
Col%	0%	0%	1%	0%	0%	0%	0%	0%	0%
<b>Total</b>	206	73	376	2143	28	57	71	46	3000
Row%	7%	2%	13%	71%	1%	2%	2%	2%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

There is a very clear pattern of association between living in a less expensive dwelling (shack, matchbox-type house, RDP house) and gambling informally rather than in a casino. Among categories where numbers are large enough to be meaningful, only people living in suburban-type houses, townhouses, and units in blocks of flats are more likely to gamble in legal casinos than to gamble in informal venues.

## LANGUAGE - GAMBLING SEVERITY

Categories	No gambling	No risk	Now risk	Moderate risk	Problem gambling	Total
<b>Languages</b>						
<b>Afrikaans</b>	227	196	19	12	6	460
Row%	49%	43%	4%	3%	1%	100%
Col%	18%	18%	6%	5%	6%	15%
<b>English</b>	383	362	47	22	15	829
Row%	46%	44%	6%	3%	2%	100%
Col%	30%	34%	15%	10%	15%	28%
<b>IsiNdebele</b>	7	3	1	0	0	11
Row%	64%	27%	9%	0%	0%	100%
Col%	1%	0%	0%	0%	0%	0%
<b>isiXhosa</b>	105	55	35	13	15	223
Row%	47%	25%	16%	6%	7%	100%
Col%	8%	5%	11%	6%	15%	7%
<b>Isi Zulu</b>	324	244	117	102	29	816
Row%	40%	30%	14%	13%	4%	100%
Col%	25%	23%	38%	45%	30%	27%
<b>Sepedi</b>	60	49	11	7	1	128
Row%	47%	38%	9%	5%	1%	100%
Col%	5%	5%	4%	3%	1%	4%
<b>Sesotho</b>	98	90	49	47	17	301
Row%	33%	30%	16%	16%	6%	100%
Col%	8%	8%	16%	21%	18%	10%
<b>Setswana</b>	67	59	26	22	12	186
Row%	36%	32%	14%	12%	6%	100%
Col%	5%	5%	8%	10%	12%	6%
<b>SiSwati</b>	0	3	0	0	0	3
Row%	0%	100%	0%	0%	0%	100%
Col%	0%	0%	0%	0%	0%	0%
<b>Tshivenda</b>	4	1	2	2	0	9
Row%	44%	11%	22%	22%	0%	100%
Col%	0%	0%	1%	1%	0%	0%
<b>Xitsonga</b>	12	10	1	1	1	25
Row%	48%	40%	4%	4%	4%	100%
Col%	1%	1%	0%	0%	1%	1%
<b>Other</b>	4	2	2	0	1	9
Row%	44%	22%	22%	0%	11%	100%
Col%	0%	0%	1%	0%	1%	0%
<b>Total</b>	1291	1074	310	228	97	3000
Row%	43%	36%	10%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

First-language speakers of isiXhosa, isiZulu, Sesotho and Setswana show higher levels of risk for problem gambling than the overall population. isiXhosa speakers show the highest rate (7%). This is entirely accounted for by data from the Cape Town sub-sample; isiXhosa speakers elsewhere show a rate of problem gambling prevalence lower than that of the overall sample. First-language speakers of Afrikaans, English, and Sepedi show lower levels of risk for problem gambling than the overall population. Numbers of first-language speakers of other languages are too small for meaningful comment.



## LANGUAGE - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Languages</b>									
<b>Afrikaans</b>	43	6	40	340	5	5	14	7	460
Row%	9%	1%	9%	74%	1%	1%	3%	2%	100%
Col%	21%	8%	11%	16%	18%	9%	20%	15%	15%
<b>English</b>	92	23	60	578	15	10	30	21	829
Row%	11%	3%	7%	70%	2%	1%	4%	3%	100%
Col%	45%	32%	16%	27%	54%	18%	42%	46%	28%
<b>IsiNdebele</b>	0	0	2	9	0	0	0	0	11
Row%	0%	0%	18%	82%	0%	0%	0%	0%	100%
Col%	0%	0%	1%	0%	0%	0%	0%	0%	0%
<b>isiXhosa</b>	4	5	32	174	0	3	3	2	223
Row%	2%	2%	14%	78%	0%	1%	1%	1%	100%
Col%	2%	7%	9%	8%	0%	5%	4%	4%	7%
<b>IsiZulu</b>	36	19	139	570	4	22	15	11	816
Row%	4%	2%	17%	70%	0%	3%	2%	1%	100%
Col%	17%	26%	37%	27%	14%	39%	21%	24%	27%
<b>Sepedi</b>	2	3	13	104	0	2	3	1	128
Row%	2%	2%	10%	81%	0%	2%	2%	1%	100%
Col%	1%	4%	3%	5%	0%	4%	4%	2%	4%
<b>Sesotho</b>	14	9	56	204	2	9	3	4	301
Row%	5%	3%	19%	68%	1%	3%	1%	1%	100%
Col%	7%	12%	15%	10%	7%	16%	4%	9%	10%
<b>Setswana</b>	9	4	27	136	1	6	3	0	186
Row%	5%	2%	15%	73%	1%	3%	2%	0%	100%
Col%	4%	5%	7%	6%	4%	11%	4%	0%	6%
<b>SiSwati</b>	1	1	0	1	0	0	0	0	3
Row%	33%	33%	0%	33%	0%	0%	0%	0%	100%
Col%	0%	1%	0%	0%	0%	0%	0%	0%	0%
<b>Tshivenda</b>	2	0	2	5	0	0	0	0	9
Row%	22%	0%	22%	56%	0%	0%	0%	0%	100%
Col%	1%	0%	1%	2%	0%	0%	0%	0%	4%
<b>Xitsonga</b>	1	3	5	16	0	0	0	0	25
Row%	4%	12%	20%	64%	0%	0%	0%	0%	100%
Col%	0%	4%	1%	1%	0%	0%	0%	0%	1%
<b>Other</b>	2	0	0	6	1	0	0	0	9
Row%	22%	0%	0%	67%	11%	0%	0%	0%	100%
Col%	1%	0%	0%	0%	4%	0%	0%	0%	0%
<b>Total</b>	206	73	376	2143	28	57	71	46	3000
Row%	7%	2%	13%	71%	1%	2%	2%	2%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

First-language speakers of English are slightly more likely to gamble in legal casinos than in informal venues. First-language speakers of Afrikaans show identical proportions of casino-only and informal-setting-only gambling. First-language speakers of indigenous African languages are much more likely to gamble in informal venues than in legal casinos.

GENDER - GAMBLING SEVERITY						
Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Gender</b>						
<b>Male</b>	535	586	192	135	52	1500
Row%	36%	39%	13%	9%	3%	100%
Col%	41%	55%	62%	59%	54%	50%
<b>Female</b>	756	488	118	93	45	1500
Row%	50%	33%	8%	6%	3%	100%
Col%	59%	45%	38%	41%	46%	50%
<b>Total</b>	1291	1074	310	228	97	3000
Row%	43%	36%	10%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

54% of people at high risk for problem gambling are men. However, 50% of women never gamble, compared with 36% of men. Therefore, the table does *not* imply that male gamblers are more likely to develop problems than female gamblers. The influence of gender on risk of problem gambling is tested in regression analysis provided later. From descriptive data alone it appears to be small. The analysis we regard as most informative of the three we will provide here confirms this impression.

GENDER - GAMBLING LOCATION									
Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Gender</b>									
<b>Male</b>	94	61	218	982	20	45	46	34	1500
Row%	6%	4%	15%	65%	1%	3%	3%	2%	100%
Col%	46%	84%	58%	46%	71%	79%	65%	74%	50%
<b>Female</b>	112	12	158	1161	8	12	25	12	1500
Row%	7%	1%	11%	77%	1%	1%	2%	1%	100%
Col%	54%	16%	42%	54%	29%	21%	35%	26%	50%
<b>Total</b>	206	73	376	2143	28	57	71	46	3000
Row%	7%	2%	13%	71%	1%	2%	2%	2%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

The descriptive data are compatible with the hypothesis that a slightly larger share of gambling by women than of men occurs in legal casinos by comparison with informal venues.

## AGE - GAMBLING SEVERITY

Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Age</b>						
<b>18-24</b>	233	140	56	57	15	501
Row%	47%	28%	11%	11%	3%	100%
Col%	18%	13%	18%	25%	15%	17%
<b>25-20</b>	216	156	70	39	29	510
Row%	42%	31%	14%	8%	6%	100%
Col%	17%	15%	23%	17%	30%	17%
<b>31-35</b>	162	130	32	34	10	368
Row%	44%	35%	9%	9%	3%	100%
Col%	13%	12%	10%	15%	10%	12%
<b>36-45</b>	223	215	73	45	18	574
Row%	39%	37%	13%	8%	3%	100%
Col%	17%	20%	24%	20%	19%	19%
<b>46-55</b>	179	198	36	22	11	446
Row%	40%	44%	8%	5%	2%	100%
Col%	14%	18%	12%	10%	11%	15%
<b>56-65</b>	108	119	21	17	6	271
Row%	40%	44%	8%	6%	2%	100%
Col%	8%	11%	7%	7%	6%	9%
<b>66-75</b>	91	66	8	6	1	172
Row%	53%	38%	5%	3%	1%	100%
Col%	7%	6%	3%	3%	1%	6%
<b>76 +</b>	79	50	14	8	7	158
Row%	50%	32%	9%	5%	4%	100%
Col%	6%	5%	5%	4%	7%	5%
<b>Total</b>	1291	1074	310	228	97	3000
Row%	43%	36%	10%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

Risk for problem gambling is higher among people under 30 years of age than in the overall population, and is substantially lower among people 66-75 years of age than in the overall population. The Gauteng sub-sample differs from the overall sample in showing the highest risk levels for problem gambling in the youngest people surveyed (18-24), whereas the overall data show peak risk in the group aged 25-30. A pattern sometimes noted in northern countries, of specific problem gambling issues among some elderly people, is compatible with observations here: 4% of respondents over the age of 76 were found to be at high risk for problem gambling. This rise in prevalence at the most elderly end of the age distribution will tend to weaken the capacity of regression analysis to yield a clear picture of the relationship between age and risk for problem gambling in younger people.

AGE - GAMBLING LOCATION									
Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
Age									
<b>18-24</b>	26	6	74	363	1	7	17	7	501
Row%	5%	1%	15%	72%	0%	1%	3%	1%	100%
Col%	13%	8%	20%	17%	4%	12%	24%	15%	17%
<b>25-20</b>	20	9	72	374	3	8	19	5	510
Row%	4%	2%	14%	73%	1%	2%	4%	1%	100%
Col%	10%	12%	19%	17%	11%	14%	27%	11%	17%
<b>31-35</b>	26	9	38	272	3	7	6	7	368
Row%	7%	2%	10%	74%	1%	2%	2%	2%	100%
Col%	13%	12%	10%	13%	11%	12%	8%	15%	12%
<b>36-45</b>	45	14	81	396	5	11	11	11	574
Row%	8%	2%	14%	69%	1%	2%	2%	2%	100%
Col%	22%	19%	22%	18%	18%	19%	15%	24%	19%
<b>46-55</b>	43	11	45	313	7	11	9	7	446
Row%	10%	2%	10%	70%	2%	2%	2%	2%	100%
Col%	21%	15%	12%	15%	25%	19%	13%	15%	15%
<b>56-65</b>	24	10	30	187	2	6	7	5	271
Row%	9%	4%	11%	69%	1%	2%	3%	2%	100%
Col%	12%	14%	8%	9%	7%	11%	10%	11%	9%
<b>66-75</b>	12	11	12	127	5	3	1	1	172
Row%	7%	6%	7%	74%	3%	2%	1%	1%	100%
Col%	6%	15%	3%	6%	18%	5%	1%	2%	6%
<b>76 +</b>	10	3	24	111	2	4	1	3	158
Row%	6%	2%	15%	70%	1%	3%	1%	2%	100%
Col%	5%	4%	6%	5%	7%	7%	1%	7%	5%
<b>Total</b>	206	73	376	2143	28	57	71	46	3000
Row%	7%	2%	13%	71%	1%	2%	2%	2%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

The descriptive data show no clear evidence of a relationship between age and location of gambling activity, though they are compatible with a slight tendency for people to switch from gambling at informal venues to gambling at legal casinos as they reach middle age.

RACE - GAMBLING SEVERITY						
Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Race</b>						
<b>Black</b>	770	586	261	205	84	1906
Row%	40%	31%	14%	11%	4%	100%
Col%	60%	55%	84%	90%	87%	64%
<b>Coloured</b>	173	144	17	15	6	355
Row%	49%	41%	5%	4%	2%	100%
Col%	13%	13%	5%	7%	6%	12%
<b>Indian</b>	61	77	5	3	3	149
Row%	41%	52%	3%	2%	2%	100%
Col%	5%	7%	2%	1%	3%	5%
<b>White</b>	287	267	27	5	4	590
Row%	49%	45%	5%	1%	1%	100%
Col%	22%	25%	9%	2%	4%	20%
<b>Total</b>	1291	1074	310	228	97	3000
Row%	43%	36%	10%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

Descriptive data support the remark that Whites and Coloureds are more likely not to gamble at all than Blacks or Indians. There is a suggested association between being Black and risk for problem gambling, though the apparent significance of this is suspect prior to analysis due to the imbalance between the total number of Black respondents and the total numbers in other population groups. The descriptive data suggest a negative association being White and risk for problem gambling, with prevalence in this sub-sample being compatible with generally observed rates in wealthy countries.

RACE - GAMBLING LOCATION									
Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Race</b>									
<b>Black</b>	81	45	298	1369	9	45	36	23	1906
Row%	4%	2%	16%	72%	0%	2%	2%	1%	100%
Col%	39%	62%	79%	64%	32%	79%	51%	50%	64%
<b>Coloured</b>	25	10	42	246	1	8	13	10	355
Row%	7%	3%	12%	69%	0%	2%	4%	3%	100%
Col%	12%	14%	11%	11%	4%	14%	18%	22%	12%
<b>Indian</b>	25	8	6	89	6	1	7	7	149
Row%	17%	5%	4%	60%	4%	1%	5%	5%	100%
Col%	12%	11%	2%	4%	21%	2%	10%	15%	5%
<b>White</b>	75	10	30	439	12	3	15	6	590
Row%	13%	2%	5%	74%	2%	1%	3%	1%	100%
Col%	36%	14%	8%	20%	43%	5%	21%	13%	20%
<b>Total</b>	206	73	376	2143	28	57	71	46	3000
Row%	7%	2%	13%	71%	1%	2%	2%	2%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Blacks are much more likely to gamble in informal venues than legal casinos; the reverse pattern prevails among Whites and Indians. People in the Coloured sub-sample are somewhat more likely to gamble at informal venues than at legal casinos.

We asked participants to report their levels of education. However, we do not show cross-tabulations for this variable here. The massive dominance in the sample of people who exited formal education after completing Grade 12 / standard 10 entirely obscures any relationship between level of education and risk for problem gambling, as well as between level of education and preferred gambling settings, that might exist. Only a more specialized study of the complex interactions among school quality, total years in schooling, and factors that predict lifestyles that in turn elevate risk for problem gambling is likely to shed scientific light on this relationship.

EMPLOYMENT STATUS - GAMBLING SEVERITY						
Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Employment status</b>						
<b>Full-time</b>	522	488	135	79	36	1260
Row%	41%	39%	11%	6%	3%	100%
Col%	40%	45%	44%	35%	37%	42%
<b>Part-time</b>	113	89	37	26	11	276
Row%	41%	32%	13%	9%	4%	100%
Col%	9%	8%	12%	11%	11%	9%
<b>Occasional/Seasonal</b>	5	4	1	0	1	11
Row%	45%	36%	9%	0%	9%	100%
Col%	0%	0%	0%	0%	1%	0%
<b>Unemployed</b>	371	295	96	103	40	905
Row%	41%	33%	11%	11%	4%	100%
Col%	29%	27%	31%	45%	41%	30%
<b>Scholar/Student</b>	96	56	20	11	5	188
Row%	51%	30%	11%	6%	3%	100%
Col%	7%	5%	6%	5%	5%	6%
<b>Retired</b>	172	133	18	8	3	334
Row%	51%	40%	5%	2%	1%	100%
Col%	13%	12%	6%	4%	3%	11%
<b>Disabled</b>	11	9	2	0	1	23
Row%	48%	39%	9%	0%	4%	100%
Col%	1%	1%	1%	0%	1%	1%
<b>Not started school</b>	1	0	1	1	0	3
Row%	33%	0%	33%	33%	0%	100%
Col%	0%	0%	0%	0%	0%	0%
<b>Total</b>	1291	1074	310	228	97	3000
Row%	43%	36%	10%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

Commenting only where numbers are large enough to be meaningful, unemployed and part-time employed people in the sample are more likely to be at risk for problem gambling than the overall sample.

## EMPLOYMENT STATUS - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Employment status</b>									
<b>Full-time</b>	97	30	137	900	10	24	35	27	1260
Row%	8%	2%	11%	71%	1%	2%	3%	2%	100%
Col%	47%	41%	36%	42%	36%	42%	49%	59%	42%
<b>Part-time</b>	16	3	46	196	4	3	5	3	276
Row%	6%	1%	17%	71%	1%	1%	2%	1%	100%
Col%	8%	4%	12%	9%	14%	5%	7%	7%	9%
<b>Occasional/Seasonal</b>	0	0	0	9	0	2	0	0	11
Row%	0%	0%	0%	82%	0%	18%	0%	0%	100%
Col%	0%	0%	0%	0%	0%	4%	0%	0%	0%
<b>Unemployed</b>	54	19	144	631	6	19	22	10	905
Row%	6%	2%	16%	70%	1%	2%	2%	1%	100%
Col%	26%	26%	38%	29%	21%	33%	31%	22%	30%
<b>Scholar/Student</b>	9	3	24	142	1	2	5	2	188
Row%	5%	2%	13%	76%	1%	1%	3%	1%	100%
Col%	4%	4%	6%	7%	4%	4%	7%	4%	6%
<b>Retired</b>	28	18	22	245	7	6	4	4	334
Row%	8%	5%	7%	73%	2%	2%	1%	1%	100%
Col%	14%	25%	6%	11%	25%	11%	6%	9%	11%
<b>Disabled</b>	1	0	3	18	0	1	0	0	23
Row%	4%	0%	13%	78%	0%	4%	0%	0%	100%
Col%	0%	0%	1%	1%	0%	2%	0%	0%	1%
<b>Not started school</b>	1	0	0	2	0	0	0	0	3
Row%	33%	0%	0%	67%	0%	0%	0%	0%	100%
Col%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>Total</b>	206	73	376	2143	28	57	71	46	3000
Row%	7%	2%	13%	71%	1%	2%	2%	2%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Unemployed and part-time employed people who gamble are much more likely than people who are employed full-time to gamble exclusively in informal venues. However, even among the full-time employed, slightly more of the sample gamble informally but never in legal casinos than gamble in legal casinos but not informally.

## MAIN SOURCE OF INCOME - GAMBLING SEVERITY

Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Income Source</b>						
<b>Wages/Salaries</b>	632	569	170	101	43	1515
Row%	42%	38%	11%	7%	3%	100%
Col%	49%	53%	55%	44%	44%	51%
<b>Remittances/Allowance</b>	64	60	17	23	7	171
Row%	37%	35%	10%	13%	4%	100%
Col%	5%	6%	5%	10%	7%	6%
<b>Pensions/Grants</b>	234	167	26	18	11	456
Row%	51%	37%	6%	4%	2%	100%
Col%	18%	16%	8%	8%	11%	15%
<b>Farm Products</b>	3	0	0	1	1	5
Row%	60%	0%	0%	20%	20%	100%
Col%	0%	0%	0%	0%	1%	0%
<b>Other non farm</b>	13	17	9	5	4	48
Row%	27%	35%	19%	10%	8%	100%
Col%	1%	2%	3%	2%	4%	2%
<b>No income</b>	345	261	88	80	31	805
Row%	43%	32%	11%	10%	4%	100%
Col%	27%	24%	28%	35%	32%	27%
<b>Total</b>	1291	1074	310	228	97	3000
Row%	43%	36%	10%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

Where main source of income is concerned, the only groups showing higher risk for problem gambling than the overall sample are those reporting no income and those reporting main income from remittances and allowances. Note that most respondents who reported earning no income, including some who also reported no savings and no borrowing, reported non-zero expenditures. These data should therefore be treated with caution.

## MAIN SOURCE OF INCOME - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Income Source</b>									
<b>Wages/Salaries</b>	113	35	176	1084	13	26	38	30	1515
Row%	7%	2%	12%	72%	1%	2%	3%	2%	100%
Col%	55%	48%	47%	51%	46%	46%	54%	65%	51%
<b>Remittances/ Allowance</b>	7	4	27	117	2	5	9	0	171
Row%	4%	2%	16%	68%	1%	3%	5%	0%	100%
Col%	3%	5%	7%	5%	7%	9%	13%	0%	6%
<b>Pensions/Grants</b>	37	20	44	330	6	9	5	5	456
Row%	8%	4%	10%	72%	1%	2%	1%	1%	100%
Col%	18%	27%	12%	15%	21%	16%	7%	11%	15%
<b>Farm Products</b>	1	0	0	4	0	0	0	0	5
Row%	20%	0%	0%	80%	0%	0%	0%	0%	100%
Col%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>Other non farm</b>	1	1	7	33	0	2	3	1	48
Row%	2%	2%	15%	69%	0%	4%	6%	2%	100%
Col%	0%	1%	2%	2%	0%	4%	4%	2%	2%



### MAIN SOURCE OF INCOME - GAMBLING LOCATION (continued)

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Income Source</b>									
<b>No income</b>	47	13	122	575	7	15	16	10	805
Row%	6%	2%	15%	71%	1%	2%	2%	1%	100%
Col%	23%	18%	32%	27%	25%	26%	23%	22%	27%
<b>Total</b>	206	73	376	2143	28	57	71	46	3000
Row%	7%	2%	13%	71%	1%	2%	2%	2%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

No typw of main source of income predicts a higher frequency of gambling exclusively in formal casinos than of gambling exclusively in informal settings. People who report no income are more likely than others to gamble exclusively in informal settings.

### NUMBER OF DEPENDENT CHILDREN - GAMBLING SEVERITY

Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Number of Children</b>						
<b>0</b>	733	581	163	127	54	1658
Row%	44%	35%	10%	8%	3%	100%
Col%	57%	54%	53%	56%	56%	55%
<b>1</b>	260	208	63	41	17	589
Row%	44%	35%	11%	7%	3%	100%
Col%	20%	19%	20%	18%	18%	20%
<b>2</b>	180	169	44	29	15	437
Row%	41%	39%	10%	7%	3%	100%
Col%	14%	16%	14%	13%	15%	15%
<b>3</b>	82	71	20	14	4	191
Row%	43%	37%	10%	7%	2%	100%
Col%	6%	7%	6%	6%	4%	6%
<b>4</b>	22	31	11	13	5	82
Row%	27%	38%	13%	16%	6%	100%
Col%	2%	3%	4%	6%	5%	3%
<b>5</b>	8	9	6	2	0	25
Row%	32%	36%	24%	8%	0%	100%
Col%	1%	1%	2%	1%	0%	1%
<b>6</b>	3	4	3	1	0	11
Row%	27%	36%	27%	9%	0%	100%
Col%	0%	0%	1%	0%	0%	0%
<b>7</b>	1	1	0	1	0	3
Row%	33%	33%	0%	33%	0%	100%
Col%	0%	0%	0%	0%	0%	0%
<b>8</b>	0	0	0	0	1	1
Row%	0%	0%	0%	0%	100%	100%
Col%	0%	0%	0%	0%	1%	0%
<b>9</b>	2	0	0	0	0	2
Row%	100%	0%	0%	0%	0%	100%
Col%	0%	0%	0%	0%	0%	0%
<b>10</b>	0	0	0	0	1	1
Row%	0%	0%	0%	0%	100%	100%
Col%	0%	0%	0%	0%	1%	0%
<b>Total</b>	1291	1074	310	228	97	3000
Row%	43%	36%	10%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

Problem gambling is often regarded as a particularly serious social problem insofar as problem gamblers put their children at economic and social risk. The share of the sample at high and moderate risk for problem gambling is approximately the same in the sub-sample who have some dependent children and the sub-sample who have none.

Respondents were asked to report personal income, personal savings, personal borrowing, and household income. The resulting data must be regarded with caution because 8-10% of respondents refused to provide data about personal finances, and a further 3% reported not knowing these data. 20% reported having no income, yet reported positive rates of expenditure.

Due to the continuous nature of the personal financial variables, cross-tabulation tables showing their relationships with risk for problem gambling and with frequented gambling setting are uninformative. Thus we do not display these tables here.

The descriptive data suggest a clear association between higher income and preference for gambling in legal casinos rather than informal venues. They also suggest a strong association between risk for problem gambling and low accumulation of savings.

We compared risk for problem gambling with total reported expenditure on leisure activities. The resulting data resist reasonable interpretation. 470 respondents reported non-zero gambling but no spending on leisure activities. This includes 29 respondents found to be at high risk for problem gambling, 30% of the sample at high risk. It seems highly unlikely that these respondents are all professional gamblers. In addition, 351 respondents refused to provide information, and 276 reported that they do not know how much they spend on leisure activities. We conjecture that respondents understood 'leisure' in varying and idiosyncratic senses.

We asked respondents to report on consumption of specific leisure activities (e.g., going to the cinema, sporting events, etc.), because we were interested in the extent to which gambling might crowd out alternative activities as risk for problem gambling increases. However, these data provide no evidence whatsoever of any such relationship. We have therefore not shown these cross-tabulations.

It has also been hypothesized that among problem gamblers, gambling crowds out other social activities. This hypothesis provides the basis for the popular image of the 'lonely addict'. Our data provide no evidence for this hypothesis, finding the distribution of risk for problem gambling to be similar to the overall sample proportions for every level of frequency of involvement in social activities. Nor do the data furnish evidence of an interesting relationship between frequency of involvement in social activities and types of settings at which respondents gamble.

This concludes our review of demographic data. We now provide the results of multivariate regression analysis of these demographic variables on risk scores for problem gambling (CPGI / PGSI scores). Before presenting these results (and the further regression results given at the conclusions of Parts 2 and 3), some explanatory notes are in order.

A multivariate regression analysis tests an *hypothesis* about influences on an outcome variable (in this instance, risk for problem gambling). One expresses the hypothesis in question in one's decision as to which candidate predictor variables ('independent variables') to include in one's model. We arrived at the hypotheses tested in the present report in two ways. First, we made use of our social scientific knowledge, gleaned from countless studies by others, of both South African society and problem and pathological gambling. Second, we followed the method of beginning with *naïve* models that include every available variable of the relevant type, and then *omitting* variables that turn out to weaken the informativeness of the models. The regression tables we present here have all been 'pruned' by this method.

We will provide an example of such 'pruning' with reference to the first of our tables, the one presented immediately below. To develop this model, we began by including every demographic variable on which we collected relatively complete and reliable data<sup>1</sup> (but no non-demographic variables), and running an ordinary least-squares (OLS) regression on this 'unpruned' model. We then studied the results to determine which sets of variables exhibited strongest *multicollinearity* – that is, were extremely strong predictors of one another's covariation with risk for problem gambling. Where such multicollinearity *made sense* given our background knowledge of the phenomena, we then omitted variables which seemed mainly to be 'piggybacking' on other variables. For example, in the unpruned model, a subject's deriving her largest share of income from sale of farm products is a highly significant

predictor of high risk for problem gambling. But inspection showed that being a member of the Coloured population group is an equally strong predictor of high risk for problem gambling in the unpruned model, and that everyone in our sample who derives the largest share of their income from sale of farm products is a member of the Coloured population group. We *judged* – perhaps mistakenly<sup>2</sup> – that population group membership is a more important property where risk for problem gambling is concerned than specific source of main income. Therefore, we omitted ‘derives main income from sale of farm products’ as an independent variable. This does not mean that these data about subjects were thrown away. We instead moved this source of income into the general class against which the significance of deriving main income from wages and salaries is tested. Thus ‘derives main income from sale of farm products’ does not appear in any of the regression tables in this report. But ‘wages and salaries’ (meaning ‘derives main income from wages and salaries’) *does* appear, and signifies ‘as opposed to derives main income from other sources listed in the relevant cross-tabulation’ – including, then, sale of farm products.

Each regression table lists all of the independent variables included in the model used to generate the table in question. Beside each independent variable there appear two numbers. The right-hand number, in parentheses, is the *standard error* of the estimation of the variable (the standard deviation of the estimate from the best-fitting regression line). This is not the main number of interest. The left-hand number is the *regression coefficient estimate*. This gives the ratio of the covariation between the independent variable in question and the other independent variables in the model to the variation in the outcome variable (i.e., risk for problem gambling). The coefficient may be positive or negative. Intuitively, the larger a positive coefficient is, the greater the extent to which it predicts risk for problem gambling. The further from 0 a negative coefficient is, the greater the extent to which it predicts *reduced* risk for problem gambling (relative to the population, in this case our sample of urban-dwelling adult South Africans). As a coefficient, positive or negative, approaches 0 from either side, the extent to which it predicts *anything* about risk for problem gambling in the population also approaches 0. Three stars beside a positive coefficient say that having the property represented by the independent variable in question is a statistically significant predictor of elevated risk for problem gambling at the 1% level (meaning that 99 times out of 100, the analysis will identify the predictor successfully). Two stars beside a positive coefficient say that having the property represented by the independent variable in question is a statistically significant predictor of elevated risk for problem gambling at the 5% level (meaning that 95 times out of 100, the analysis will identify the predictor successfully). One star beside a positive coefficient says that having the property represented by the independent variable in question is a statistically significant predictor of elevated risk for problem gambling at the 10% level (meaning that 90 times out of 100, the analysis will identify the predictor successfully). The stars have the same meaning applied to the statistical significance of negative predictors. No stars beside a coefficient mean that, according to the analysis, the independent variable measured by the coefficient is not a statistically significant predictor of higher or lower risk for problem gambling.

Table I below tests a ‘pruned’ model of demographic variables as predictive factors for risk of problem gambling. Intuitively, the reader should interpret this table as follows. Suppose that demographic factors that help determine problem gambling aren’t correlated with anything else that might contribute to it in random particular cases. Even more intuitively: suppose one set out to try to explain differences in people’s risk for problem gambling by reference to differences in their demographic profiles only. The table shows which demographic factors, in our model, are the significant predictors, for and against, conditional on that explanatory commitment. *Note: we do not think the explanatory commitment is well justified.* So we think **the first table below is the least interesting and informative of the three we will show. The point of our preceding in the way we do, beginning with this incomplete model and then adding to it in stages, is to unfold a certain story that speaks to competing perceptions of gambling in SA. For the conclusion of the story – as with any story – one must read on to the end.**

<sup>1</sup> That is: *not* individual or household income, expenditure, savings or borrowing data, which is neither complete nor reliable.

<sup>2</sup> Use of statistical techniques in scientific analysis does not deliver certainty of results. In empirical science, there is no such thing as a certain conclusion. And statistical analysis requires expert, but fallible, judgment – both about statistical techniques themselves, and about the nature of the phenomena being analysed.

TABLE I

## OLS REGRESSION OF PGICPGI SCORE ON DEMOGRAPHIC VARIABLES

Variable	Coefficient Estimate	Std. Error
Tshwane	-0.66***	(0.15)
West Rand	0.64***	(0.23)
East Rand	-0.089	(0.14)
Cape Town	-0.24*	(0.14)
Durban	-0.53***	(0.14)
Medium SES <sup>1</sup>	0.54***	(0.13)
High SES <sup>2</sup>	-0.098	(0.14)
Male	0.27***	(0.087)
Age	-0.0081**	(0.0037)
Black	0.48***	(0.14)
Coloured	0.11	(0.17)
Indian	0.22	(0.22)
Tertiary Education	-0.25*	(0.13)
Wages/salaries <sup>3</sup>	-0.67**	(0.30)
Remittances/allowances <sup>4</sup>	0.058	(0.20)
Pensions/grants <sup>5</sup>	0.13	(0.19)
Full-time employment	0.51*	(0.30)
Part-time employment	0.58**	(0.29)
Retired	-0.27	(0.23)
No. of dependents	0.018	(0.036)
Constant	0.93***	(0.26)
Observations	3000	
R-squared	0.069	
Adjusted R-squared	0.063	

Standard errors in parentheses

\*\*\* represents significance at the 1% level, \*\* represents significance at the 5% level, \* represents significance at the 10% level

<sup>1,2</sup> The variables “Medium SES” and “High SES” refer to a subject’s socioeconomic status and are derived from the type of dwelling the individual inhabits.

<sup>3,4,5</sup> The variables “Wages/salaries”, “Remittances/allowances” and “Pensions/grants” refer to the main source of income of the respondent.

In this first model, the following factors most strongly predict higher risk for problem gambling: living in the West Rand, being of medium socio-economic status, being male, and being a member of the Black population group. One factor, being in part-time employment, predicts higher risk for problem gambling at the second-highest of our three levels of statistical significance. One factor, being employed full-time, predicts higher risk for problem gambling at the third-highest of our three levels of statistical significance. No other demographic variables, in the ‘all-demographic’ model, significantly predict positive risk for problem gambling.

In this model, two factors predict reduced risk for problem gambling at the highest of our three significance levels: living in Tshwane, and living in Durban. Two factors predict reduced risk for problem gambling at the second-highest of our three significance levels: higher age, and deriving the largest share of income from wages and salaries. The second result is difficult to understand, because being employed full-time is a predictor of higher risk of problem gambling. Two factors predict reduced risk for problem gambling at the third-highest of our three significance levels: living in Cape Town, and having some tertiary education.

**Demographic variables alone do not, in our opinion, tell a convincing story about factors contributing to problem gambling in South Africa. Considering them alone makes problem gambling appear to be an aspect of living in the West Rand, being relatively but not extremely poor, and being Black. Given the rest of our data, this is an impoverished picture. As we will see, it may even be in part a false and misleading picture.**

We therefore turn to consideration of a second set of independent variables, those relating to specific gambling behaviours and attitudes to gambling.

An important issue underlying debates over gambling policy is the relationship between exposure to gambling and frequency and intensity of participation in gambling. 'Exposure' is a complex construct incorporating varying aspects. One aspect is simply awareness of different types of available gambling activities. This is also potentially informative about the extent to which casinos and other parts of the gaming industry (both formal and informal) successfully promote the activities they offer among populations in their areas.

For a range of games, we therefore asked respondents which they had heard of. In the tables below we compare these data with data on risk for problem gambling and with types of settings at which people gamble.

### HEARD OF: LUCKY DRAWS EXCLUDING LOTTERY - GAMBLING SEVERITY

Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Lucky draws</b>						
<b>yes</b>	889	809	206	163	62	2129
Row%	4%	4%	1%	1%	0%	10%
Col%	69%	75%	66%	71%	64%	71%
<b>no</b>	402	265	104	65	35	871
Row%	46%	30%	12%	7%	4%	100%
Col%	31%	25%	34%	29%	36%	29%
<b>Total</b>	1291	1074	310	228	97	3000
Row%	43%	36%	10%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

### HEARD OF: LUCKY DRAWS EXCLUDING LOTTERY - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Lucky draws</b>									
<b>yes</b>	163	54	266	1484	24	43	55	40	2129
Row%	8%	3%	12%	70%	1%	2%	3%	2%	100%
Col%	79%	74%	71%	69%	86%	75%	77%	87%	71%
<b>no</b>	43	19	110	659	4	14	16	6	871
Row%	5%	2%	13%	76%	0%	2%	2%	1%	100%
Col%	21%	26%	29%	31%	14%	25%	23%	13%	29%
<b>Total</b>	206	73	376	2143	28	57	71	46	3000
Row%	7%	2%	13%	71%	1%	2%	2%	2%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Risk for problem gambling is negatively associated with having heard of lucky draws. The data suggest no interesting relationship between the probability of having heard of lucky draws and the type of gambling settings respondents patronise.

### HEARD OF: SCRATCH CARDS - GAMBLING SEVERITY

Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Scratch cards</b>						
<b>yes</b>	1044	982	272	201	76	2575
Row%	41%	38%	11%	8%	3%	100%
Col%	81%	91%	88%	88%	78%	86%
<b>no</b>	247	92	38	27	21	425
Row%	58%	22%	9%	6%	5%	100%
Col%	19%	9%	12%	12%	22%	14%
<b>Total</b>	1291	1074	310	228	97	3000
Row%	43%	36%	10%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

The data suggest no relationship between probability of having heard of scratch cards and risk for problem gambling.

### HEARD OF: SCRATCH CARDS - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Scratch cards</b>									
<b>yes</b>	192	64	328	1798	24	57	66	46	2575
Row%	7%	2%	13%	70%	1%	2%	3%	2%	100%
Col%	93%	88%	87%	84%	86%	100%	93%	100%	86%
<b>no</b>	14	9	48	345	4	0	5	0	425
Row%	3%	2%	11%	81%	1%	0%	1%	0%	100%
Col%	7%	12%	13%	16%	14%	0%	7%	0%	14%
<b>Total</b>	206	73	376	2143	28	57	71	46	3000
Row%	7%	2%	13%	71%	1%	2%	2%	2%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

The data suggest no interesting relationship between the probability of having heard of scratch cards and type of gambling setting respondents patronise.

### HEARD OF: FAFI / ICHINA - GAMBLING SEVERITY

Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Fafi</b>						
<b>yes</b>	734	689	208	174	61	1866
Row%	39%	37%	11%	9%	3%	100%
Col%	57%	64%	67%	76%	63%	62%
<b>no</b>	557	385	102	54	36	1134
Row%	49%	34%	9%	5%	3%	100%
Col%	43%	36%	33%	24%	37%	38%
<b>Total</b>	1291	1074	310	228	97	3000
Row%	43%	36%	10%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

The data show no interesting relationship between the probability of having heard of fafi or iChina and risk for problem gambling.

### HEARD OF: FAFI / ICHINA - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Fafi</b>									
<b>yes</b>	124	53	273	1280	18	42	39	37	1866
Row%	7%	3%	15%	69%	1%	2%	2%	2%	100%
Col%	60%	73%	73%	60%	64%	74%	55%	80%	62%
<b>no</b>	82	20	103	863	10	15	32	9	1134
Row%	7%	2%	9%	76%	1%	1%	3%	1%	100%
Col%	40%	27%	27%	40%	36%	26%	45%	20%	38%
<b>Total</b>	206	73	376	2143	28	57	71	46	3000
Row%	7%	2%	13%	71%	1%	2%	2%	2%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

There is an unsurprising relationship between patronising informal gambling venues rather than legal casinos and probability of having heard of distinctively African forms of informal gambling.

### HEARD OF: LOTTERY / LOTTO - GAMBLING SEVERITY

Categories Lottery	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>yes</b>	1234	1072	306	227	94	2933
Row%	42%	37%	10%	8%	3%	100%
Col%	96%	100%	99%	100%	97%	98%
<b>no</b>	57	2	4	1	3	67
Row%	85%	3%	6%	1%	4%	100%
Col%	4%	0%	1%	0%	3%	2%
<b>Total</b>	1291	1074	310	228	97	3000
Row%	43%	36%	10%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

There is no evidence of a relationship between having heard of lotteries and risk for problem gambling. Almost all respondents are aware of lotteries.

### HEARD OF: LOTTERY / LOTTO - GAMBLING LOCATION

Location Lottery	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>yes</b>	205	72	370	2084	28	57	71	46	2933
Row%	7%	2%	13%	71%	1%	2%	2%	2%	100%
Col%	100%	99%	98%	97%	100%	100%	100%	100%	98%
<b>no</b>	1	1	6	59	0	0	0	0	67
Row%	1%	1%	9%	88%	0%	0%	0%	0%	100%
Col%	0%	1%	2%	3%	0%	0%	0%	0%	2%
<b>Total</b>	206	73	376	2143	28	57	71	46	3000
Row%	7%	2%	13%	71%	1%	2%	2%	2%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

The data suggest no interesting relationship between the probability of having heard of lotteries and type of gambling settings respondents patronise.

### HEARD OF: BINGO - GAMBLING SEVERITY

Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Bingo</b>						
<b>yes</b>	570	540	96	70	21	1297
Row%	44%	42%	7%	5%	2%	100%
Col%	44%	50%	31%	31%	22%	43%
<b>no</b>	721	534	214	158	76	1703
Row%	42%	31%	13%	9%	4%	100%
Col%	56%	50%	69%	69%	78%	57%
<b>Total</b>	1291	1074	310	228	97	3000
Row%	43%	36%	10%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

The data are compatible with a negative relationship between having heard of bingo and risk for problem gambling.

### HEARD OF: BINGO - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Bingo</b>									
<b>yes</b>	130	35	119	908	19	18	41	27	1297
Row%	10%	3%	9%	70%	1%	1%	3%	2%	100%
Col%	63%	48%	32%	42%	68%	32%	58%	59%	43%
<b>no</b>	76	38	257	1235	9	39	30	19	1703
Row%	4%	2%	15%	73%	1%	2%	2%	1%	100%
Col%	37%	52%	68%	58%	32%	68%	42%	41%	57%
<b>Total</b>	206	73	376	2143	28	57	71	46	3000
Row%	7%	2%	13%	71%	1%	2%	2%	2%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

The data suggest a relationship between having heard of bingo and being more likely than the overall sample to patronise legal casinos.

### HEARD OF: DICE GAMES FOR MONEY - GAMBLING SEVERITY

Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Dice games</b>						
<b>yes</b>	909	845	243	189	72	2258
Row%	40%	37%	11%	8%	3%	100%
Col%	70%	79%	78%	83%	74%	75%
<b>no</b>	382	229	67	39	25	742
Row%	51%	31%	9%	5%	3%	100%
Col%	30%	21%	22%	17%	26%	25%
<b>Total</b>	1291	1074	310	228	97	3000
Row%	43%	36%	10%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

The data suggest no evidence of a relationship between having heard of dice games for money and risk for problem gambling.



### HEARD OF: DICE GAMES FOR MONEY - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Dice games</b>									
<b>yes</b>	158	57	315	1548	24	56	59	41	2258
Row%	7%	3%	14%	69%	1%	2%	3%	2%	100%
Col%	77%	78%	84%	72%	86%	98%	83%	89%	75%
<b>no</b>	48	16	61	595	4	1	12	5	742
Row%	6%	2%	8%	80%	1%	0%	2%	1%	100%
Col%	23%	22%	16%	28%	14%	2%	17%	11%	25%
<b>Total</b>	206	73	376	2143	28	57	71	46	3000
Row%	7%	2%	13%	71%	1%	2%	2%	2%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

The data suggest no interesting relationship between the probability of having heard of dice games for money and type of gambling venue patronised.

### HEARD OF: ROULETTE - GAMBLING SEVERITY

Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Roulette</b>						
<b>yes</b>	551	560	98	73	23	1305
Row%	42%	43%	8%	6%	2%	100%
Col%	43%	52%	32%	32%	24%	44%
<b>no</b>	740	514	212	155	74	1695
Row%	44%	30%	13%	9%	4%	100%
Col%	57%	48%	68%	68%	76%	57%
<b>Total</b>	1291	1074	310	228	97	3000
Row%	43%	36%	10%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

Relative to the general sample, there is a negative relationship between the probability of having heard of roulette and risk for problem gambling. This might be entirely explained by the higher concentration of risk for problem gambling in people who patronise informal venues but not legal casinos.

### HEARD OF: ROULETTE - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Roulette</b>									
<b>yes</b>	137	38	114	901	20	24	42	29	1305
Row%	10%	3%	9%	69%	2%	2%	3%	2%	100%
Col%	67%	52%	30%	42%	71%	42%	59%	63%	44%
<b>no</b>	69	35	262	1242	8	33	29	17	1695
Row%	4%	2%	15%	73%	0%	2%	2%	1%	100%
Col%	33%	48%	70%	58%	29%	58%	41%	37%	57%
<b>Total</b>	206	73	376	2143	28	57	71	46	3000
Row%	7%	2%	13%	71%	1%	2%	2%	2%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

70% of people who patronise informal gambling venues but not legal casinos have not heard of roulette. Overall, 57% of the sample was unaware of it.

### HEARD OF: CARD GAMES FOR MONEY - GAMBLING SEVERITY

Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Card games</b>						
<b>yes</b>	934	904	244	193	67	2342
Row%	40%	39%	10%	8%	3%	100%
Col%	72%	84%	79%	85%	69%	78%
<b>no</b>	357	170	66	35	30	658
Row%	54%	26%	10%	5%	5%	100%
Col%	28%	16%	21%	15%	31%	22%
<b>Total</b>	1291	1074	310	228	97	3000
Row%	43%	36%	10%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

The data suggest no evidence of a relationship between having heard of card games for money and risk for problem gambling.

### HEARD OF: CARD GAMES FOR MONEY - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Card games</b>									
<b>yes</b>	173	59	321	1609	26	53	61	40	2342
Row%	7%	3%	14%	69%	1%	2%	3%	2%	100%
Col%	84%	81%	85%	75%	93%	93%	86%	87%	78%
<b>no</b>	33	14	55	534	2	4	10	6	658
Row%	5%	2%	8%	81%	0%	1%	2%	1%	100%
Col%	16%	19%	15%	25%	7%	7%	14%	13%	22%
<b>Total</b>	206	73	376	2143	28	57	71	46	3000
Row%	7%	2%	13%	71%	1%	2%	2%	2%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

The data suggest no interesting relationship between the probability of having heard of card games for money and type of gambling settings respondents patronise.

### HEARD OF: SLOT MACHINES - GAMBLING SEVERITY

Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Slot machines</b>						
<b>yes</b>	980	922	231	177	58	2368
Row%	41%	39%	10%	7%	2%	100%
Col%	76%	86%	75%	78%	60%	79%
<b>no</b>	311	152	79	51	39	632
Row%	49%	24%	13%	8%	6%	100%
Col%	24%	14%	25%	22%	40%	21%
<b>Total</b>	1291	1074	310	228	97	3000
Row%	43%	36%	10%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

Relative to the general sample, there appears to be a negative relationship between the probability of having heard of slot machines and risk for problem gambling. This might be entirely explained by the higher concentration of risk for problem gambling in people who patronize informal venues but not legal casinos.

### HEARD OF: SLOT MACHINES - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Slot machines</b>									
<b>yes</b>	195	53	283	1647	26	52	67	45	2368
Row%	8%	2%	12%	70%	1%	2%	3%	2%	100%
Col%	95%	73%	75%	77%	93%	91%	94%	98%	79%
<b>no</b>	11	20	93	496	2	5	4	1	632
Row%	2%	3%	15%	78%	0%	1%	1%	0%	100%
Col%	5%	27%	25%	23%	7%	9%	6%	2%	21%
<b>Total</b>	206	73	376	2143	28	57	71	46	3000
Row%	7%	2%	13%	71%	1%	2%	2%	2%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

The only relationship the data suggest between probability of having heard of slot machines and type of gambling setting respondents patronise is that almost no subjects who patronise legal casinos as their main gambling outlet were unaware of slot machines.

### HEARD OF: HORSE RACING OR OTHER ANIMAL BETTING GAMES - GAMBLING SEVERITY

Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Slot machines</b>						
<b>yes</b>	1066	964	260	191	73	2554
Row%	42%	38%	10%	7%	3%	100%
Col%	83%	90%	84%	84%	75%	85%
<b>no</b>	225	110	50	37	24	446
Row%	50%	25%	11%	8%	5%	100%
Col%	17%	10%	16%	16%	25%	15%
<b>Total</b>	1291	1074	310	228	97	3000
Row%	43%	36%	10%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

The data suggest no evidence of a relationship between having heard of horse racing or other animal betting games and risk for problem gambling.

### HEARD OF: HORSE RACING AND OTHER ANIMAL BETTING GAMES - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Horse racing</b>									
<b>yes</b>	180	71	322	1788	28	57	62	46	2554
Row%	7%	3%	13%	70%	1%	2%	2%	2%	100%
Col%	87%	97%	86%	83%	100%	100%	87%	100%	85%
<b>no</b>	26	2	54	355	0	0	9	0	446
Row%	6%	0%	12%	80%	0%	0%	2%	0%	100%
Col%	13%	3%	14%	17%	0%	0%	13%	0%	15%
<b>Total</b>	206	73	376	2143	28	57	71	46	3000
Row%	7%	2%	13%	71%	1%	2%	2%	2%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

The data suggest no interesting relationship between the probability of having heard of horse racing or other animal betting games and types of gambling settings respondents patronise.

### HEARD OF: SPORT BETTING - GAMBLING SEVERITY

Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Sport betting</b>						
<b>yes</b>	855	833	211	165	59	2123
Row%	40%	39%	10%	8%	3%	100%
Col%	66%	78%	68%	72%	61%	71%
<b>no</b>	436	241	99	63	38	877
Row%	50%	27%	11%	7%	4%	100%
Col%	66%	78%	68%	72%	61%	71%
<b>Total</b>	1291	1074	310	228	97	3000
Row%	43%	36%	10%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

The data suggest no evidence of a relationship between having heard of sports betting and risk for problem gambling.

### HEARD OF: SPORT BETTING - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Sport betting</b>									
<b>yes</b>	153	51	286	1458	24	48	60	43	2123
Row%	7%	2%	13%	69%	1%	2%	3%	2%	100%
Col%	74%	70%	76%	68%	86%	84%	85%	93%	71%
<b>no</b>	53	22	90	685	4	9	11	3	877
Row%	6%	3%	10%	78%	0%	1%	1%	0%	100%
Col%	26%	30%	24%	32%	14%	16%	15%	7%	29%
<b>Total</b>	206	73	376	2143	28	57	71	46	3000
Row%	7%	2%	13%	71%	1%	2%	2%	2%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Almost every respondent who gambles on anything other than lottery tickets or scratch cards has heard of sports betting.

### HEARD OF: ELECTRONIC GAMING MACHINES / GRANDSLOTS - GAMBLING SEVERITY

Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Sport betting</b>						
<b>yes</b>	833	789	178	143	49	1992
Row%	42%	40%	9%	7%	2%	100%
Col%	65%	73%	57%	63%	51%	66%
<b>no</b>	458	285	132	85	48	1008
Row%	45%	28%	13%	8%	5%	100%
Col%	35%	27%	43%	37%	49%	34%
<b>Total</b>	1291	1074	310	228	97	3000
Row%	43%	36%	10%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

The data are compatible with a negative relationship between having heard of electronic gaming machines and risk for problem gambling. Electronic gaming machines have only recently begun to be introduced in the parts of the country in which prevalence rates of high risk for problem gambling are found to be higher than average.

## HEARD OF: ELECTRONIC GAMING MACHINES / GRANDSLOTS - GAMBLING LOCATION

Location Grandslots	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>yes</b>	165	55	229	1373	24	46	60	40	1992
Row%	8%	3%	11%	69%	1%	2%	3%	2%	100%
Col%	80%	75%	61%	64%	86%	81%	85%	87%	66%
<b>no</b>	41	18	147	770	4	11	11	6	1008
Row%	4%	2%	15%	76%	0%	1%	1%	1%	100%
Col%	20%	25%	39%	36%	14%	19%	15%	13%	34%
<b>Total</b>	206	73	376	2143	28	57	71	46	3000
Row%	7%	2%	13%	71%	1%	2%	2%	2%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

The data suggest no interesting relationship between the probability of having heard of electronic gaming machines and types of gambling settings respondents patronise.

In general, risk for problem gambling does not appear to be associated with awareness, or lack of it, of the range of gambling activities available in SA. This undermines the suggestion, sometimes heard, that having visible legal gambling venues increases social levels of problem gambling by the mere mechanism of alerting people to new opportunities for risky entertainment.

The tables in the next set compare participation rates in different sorts of games with risk for problem gambling.

## PARTICIPATED IN: LUCKY DRAWS EXCLUDING LOTTERY - GAMBLING SEVERITY

Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Lucky draws</b>						
<b>yes</b>	0	107	23	18	14	162
Row%	0%	66%	14%	11%	9%	100%
Col%	0%	13%	11%	11%	23%	8%
<b>no</b>	889	702	183	145	48	1967
Row%	45%	36%	9%	7%	2%	100%
Col%	100%	87%	89%	89%	77%	92%
<b>Total</b>	889	809	206	163	62	2129
Row%	42%	38%	10%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

Only 8% of respondents participate in lucky draws. Though absolute numbers are very small, the data suggest a clear association between participation in lucky draws and risk for problem gambling. The association is particularly manifest in the Cape Town sub-sample, where the majority of respondents found to be at high risk for problem gambling participate in lucky draws.

### PARTICIPATED IN: SCRATCH CARDS - GAMBLING SEVERITY

Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Scratch cards</b>						
<b>yes</b>	0	237	79	57	25	398
Row%	0%	60%	20%	14%	6%	100%
Col%	0%	24%	29%	28%	33%	15%
<b>no</b>	1044	745	193	144	51	2177
Row%	48%	34%	9%	7%	2%	100%
Col%	100%	76%	71%	72%	67%	85%
<b>Total</b>	1044	982	272	201	76	2575
Row%	41%	38%	11%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

Although 86% of subjects report having heard of scratch cards, only 15% report participating in playing them. Among this group, there is a clear relationship between participation and risk for problem gambling. Only 60% of scratch card players are measured as being at no risk for problem gambling, and the prevalence of respondents at high risk for problem gambling in this group is double that observed in the overall sample.

### PARTICIPATED IN: FAFI / ICHINA - GAMBLING SEVERITY

Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Fafi</b>						
<b>yes</b>	0	85	54	56	28	223
Row%	0%	38%	24%	25%	13%	100%
Col%	0%	12%	26%	32%	46%	12%
<b>no</b>	734	604	154	118	33	1643
Row%	45%	37%	9%	7%	2%	100%
Col%	100%	88%	74%	68%	54%	88%
<b>Total</b>	734	689	208	174	61	1866
Row%	39%	37%	11%	9%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

There is a clear relationship among respondents between participation in fafi / iChina and risk for problem gambling. Only 12% of respondents report participation, of whom almost all live in Gauteng. However, 30% of those measured as being at high risk for problem gambling, and 48% of that group in Gauteng, participate. Furthermore, only 38% of fafi / iChina participants are measured as being at no risk for problem gambling.

### PARTICIPATED IN: LOTTERY / LOTTO - GAMBLING SEVERITY

Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Lottery</b>						
<b>yes</b>	0	920	263	187	77	1447
Row%	0%	64%	18%	13%	5%	100%
Col%	0%	86%	86%	82%	82%	49%
<b>no</b>	1234	152	43	40	17	1486
Row%	83%	10%	3%	3%	1%	100%
Col%	100%	14%	14%	18%	18%	51%
<b>Total</b>	1234	1072	306	227	94	2933
Row%	42%	37%	10%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

Just under half of respondents have played the lottery. The data are compatible with a small positive association between playing the lottery and being at high risk for problem gambling.

PARTICIPATED IN: BINGO - GAMBLING SEVERITY						
Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Bingo</b>						
<b>yes</b>	0	38	10	2	3	53
Row%	0%	72%	19%	4%	6%	100%
Col%	0%	7%	10%	3%	14%	4%
<b>no</b>	570	502	86	68	18	1244
Row%	46%	40%	7%	5%	1%	100%
Col%	100%	93%	90%	97%	86%	96%
<b>Total</b>	570	540	96	70	21	1297
Row%	44%	42%	7%	5%	2%	100%
Col%	100%	100%	100%	100%	100%	100%

Too few subjects play bingo for these data to be of significance.

PARTICIPATED IN: DICE GAMES FOR MONEY - GAMBLING SEVERITY						
Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Dice games</b>						
<b>yes</b>	0	38	23	28	24	113
Row%	0%	34%	20%	25%	21%	100%
Col%	0%	4%	9%	15%	33%	5%
<b>no</b>	909	807	220	161	48	2145
Row%	42%	38%	10%	8%	2%	100%
Col%	100%	96%	91%	85%	67%	95%
<b>Total</b>	909	845	243	189	72	2258
Row%	40%	37%	11%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

Only 5% of subjects report participation in dice games for money. However, 21% of these are measured as being at high risk for problem gambling, and only 34% are measured as being at no risk for problem gambling. In Gauteng, 36% of all subjects measured as being at high risk for problem gambling play dice games for money.

PARTICIPATED IN: ROULETTE - GAMBLING SEVERITY						
Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Roulette</b>						
<b>yes</b>	0	27	11	6	7	51
Row%	0%	53%	22%	12%	14%	100%
Col%	0%	5%	11%	8%	30%	4%
<b>no</b>	551	533	87	67	16	1254
Row%	44%	43%	7%	5%	1%	100%
Col%	100%	95%	89%	92%	70%	96%
<b>Total</b>	551	560	98	73	23	1305
Row%	42%	43%	8%	6%	2%	100%
Col%	100%	100%	100%	100%	100%	100%

Only 4% of subjects report having played roulette. Of these, 14% are measured as being at high risk for problem gambling. Over half of roulette players are measured as being at no risk for problem gambling.

### PARTICIPATED IN: CARD GAMES FOR MONEY - GAMBLING SEVERITY

Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Card games</b>						
<b>yes</b>	0	68	37	27	23	155
Row%	0%	44%	24%	17%	15%	100%
Col%	0%	8%	15%	14%	34%	7%
<b>no</b>	934	836	207	166	44	2187
Row%	43%	38%	9%	8%	2%	100%
Col%	100%	92%	85%	86%	66%	93%
<b>Total</b>	934	904	244	193	67	2342
Row%	40%	39%	10%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

Only 7% of subjects report having played card games for money. This group combines people who participate in informal poker games and people who play casino games such as blackjack. Of the group, 15% are measured as being at high risk for problem gambling. In Gauteng, 70% of respondents who play card games for money are measured as being at non-zero risk for problem gambling. This rate is nearly 10% higher than in the sample as a whole.

### PARTICIPATED IN: SLOT MACHINES - GAMBLING SEVERITY

Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Slot machines</b>						
<b>yes</b>	0	190	74	46	19	329
Row%	0%	58%	22%	14%	6%	100%
Col%	0%	21%	32%	26%	33%	14%
<b>no</b>	980	732	157	131	39	2039
Row%	48%	36%	8%	6%	2%	100%
Col%	100%	79%	68%	74%	67%	86%
<b>Total</b>	980	922	231	177	58	2368
Row%	41%	39%	10%	7%	2%	100%
Col%	100%	100%	100%	100%	100%	100%

14% of subjects report having played slot machines. There is a positive relationship between playing slot machines and risk for problem gambling, with the high risk prevalence rate in the group being double that observed in the overall sample. 58% of slot machine players are measured as being at no risk for problem gambling.

### PARTICIPATED IN: HORSE RACING OR OTHER ANIMAL BETTING GAMES - GAMBLING SEVERITY

Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Horse racing</b>						
<b>yes</b>	0	101	26	21	16	164
Row%	0%	62%	16%	13%	10%	100%
Col%	0%	10%	10%	11%	22%	6%
<b>no</b>	1066	863	234	170	57	2390
Row%	45%	36%	10%	7%	2%	100%
Col%	100%	90%	90%	89%	78%	94%
<b>Total</b>	1066	964	260	191	73	2554
Row%	42%	38%	10%	7%	3%	100%
Col%	100%	100%	100%	100%	100%	100%



Only 6% of subjects report having bet on horse races or other animal events. There is a clear positive relationship between participation and risk for problem gambling. This association appears to be substantially stronger in Durban than elsewhere. In the overall sample, 78% of subjects measured as being at high risk for problem gambling do not bet on animal events.

PARTICIPATED IN: SPORT BETTING - GAMBLING SEVERITY						
Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Sport betting</b>						
<b>yes</b>	0	53	30	28	17	128
Row%	0%	41%	23%	22%	13%	100%
Col%	0%	6%	14%	17%	29%	6%
<b>no</b>	855	780	181	137	42	1995
Row%	43%	39%	9%	7%	2%	100%
Col%	100%	94%	86%	83%	71%	94%
<b>Total</b>	855	833	211	165	59	2123
Row%	40%	39%	10%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

Only 6% of subjects report participating in sports betting. Among this group, there is a clear positive relationship with risk for problem gambling.

PARTICIPATED IN: ELECTRONIC GAMING MACHINES / GRANDSLOTS - GAMBLING SEVERITY						
Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Grandslots</b>						
<b>yes</b>	0	89	35	26	16	166
Row%	0%	54%	21%	16%	10%	100%
Col%	0%	11%	20%	18%	33%	8%
<b>no</b>	833	700	143	117	33	1826
Row%	46%	38%	8%	6%	2%	100%
Col%	100%	89%	80%	82%	67%	92%
<b>Total</b>	833	789	178	143	49	1992
Row%	42%	40%	9%	7%	2%	100%
Col%	100%	100%	100%	100%	100%	100%

8% of subjects report participating in playing electronic gaming machines. Among this group, there is a clear positive relationship with risk for problem gambling.

In general, all forms of gambling on which we surveyed respondents show positive relationships between participation rates and risk for problem gambling against the baseline risk in the sample as a whole (including, then, the 42% who participate in no gambling activities at all). Ranking games based on proportions of participants at high risk for problem gambling, we obtain, from highest to lowest:

- Dice games for money
- Card games for money
- Roulette
- Fafi / iChina *tied with* Sports betting
- Horse racing and other animal events *tied with* Electronic gaming machines
- Lucky draws
- Scratch cards *tied with* Slot machines *tied with* Bingo
- Lottery / Lotto

It has sometimes been claimed that slot machines are the ‘crack cocaine’ of forms of gambling. Our data do not support this picture for urban South Africa.

It has sometimes been suggested that, because SA has a higher proportion of low-income residents than most countries with sophisticated and regular lotteries, lottery is likely to be more strongly associated with problem gambling here. We therefore took special care to probe respondents for details of lottery participation, and interrogated its relationship with risk for problem gambling. The tables below display data derived from respondents who report **lottery play as their only form of gambling**.

PROVINCE - LOTTERY FREQUENCY				
Province	Lottery	monthly or less	more than monthly	Total
<b>Cape Town</b>		92	42	134
Row%		69%	31%	100%
Col %		25%	13%	19%
<b>Durban</b>		72	63	135
Row%		53%	47%	100%
Col %		19%	20%	19%
<b>Johannesburg including Soweto</b>		63	69	132
Row%		48%	52%	100%
Col %		17%	21%	19%
<b>Tshwane / Pretoria</b>		50	56	106
Row%		47%	53%	100%
Col %		13%	17%	15%
<b>West Rand</b>		14	32	46
Row%		30%	70%	100%
Col %		4%	10%	7%
<b>East Rand</b>		82	60	142
Row%		58%	42%	100%
Col %		22%	19%	20%
<b>Total</b>		373	322	695
Row%		54%	46%	100%
Col %		100%	100%	100%

46% of lottery-only gamblers play more frequently than monthly. The lottery is played substantially more frequently by lottery-only gambling respondents in the West Rand than by their counterpart respondents elsewhere. Cape Town lottery-only gamblers play substantially less frequently than their Gauteng or Durban counterparts.

TYPE OF DWELLING - LOTTERY FREQUENCY				
Type of Dwelling	Lottery	monthly or less	more than monthly	Total
<b>Shack, not in a backyard</b>		45	42	87
Row%		52%	48%	100%
Col %		12%	13%	13%
<b>Shack in a backyard</b>		13	4	17
Row%		76%	24%	100%
Col %		3%	1%	2%
<b>Matchbox-type house</b>		34	48	82
Row%		41%	59%	100%
Col %		9%	15%	12%
<b>Improved matchbox-type house</b>		29	26	55
Row%		53%	47%	100%
Col %		8%	8%	8%

## TYPE OF DWELLING - LOTTERY FREQUENCY (continued)

Lottery	monthly or less	more than monthly	Total
<b>Type of Dwelling</b>			
<b>Suburban-type house</b>	138	119	257
Row%	54%	46%	100%
Col %	37%	37%	37%
<b>Second house/Cottage</b>	4	0	4
Row%	100%	0%	100%
Col %	1%	0%	1%
<b>Granny flat</b>	5	4	9
Row%	56%	44%	100%
Col %	1%	1%	1%
<b>Garage/modified garage</b>	11	10	21
Row%	52%	48%	100%
Col %	3%	3%	3%
<b>Rondavel/Zozo hut</b>	1	2	3
Row%	33%	67%	100%
Col %	0%	1%	0%
<b>Part of a house</b>	0	2	2
Row%	0%	100%	100%
Col %	0%	1%	0%
<b>Townhouse or cluster house</b>	6	15	21
Row%	29%	71%	100%
Col %	2%	5%	3%
<b>Semi-detached or joint house</b>	15	11	26
Row%	58%	42%	100%
Col %	4%	3%	4%
<b>Unit in a block of flats</b>	35	16	51
Row%	69%	31%	100%
Col %	9%	5%	7%
<b>RDP house</b>	34	22	56
Row%	61%	39%	100%
Col %	9%	7%	8%
<b>Hostel/Compound</b>	1	0	1
Row%	100%	0%	100%
Col %	0%	0%	0%
<b>Hotel/Boarding house</b>	0	1	1
Row%	0%	100%	100%
Col %	0%	0%	0%
<b>Other</b>	2	0	2
Row%	100%	0%	100%
Col %	1%	0%	0%
<b>Total</b>	373	322	695
Row%	54%	46%	100%
Col %	100%	100%	100%

The data suggest no clear pattern of relationships between type of dwelling and frequency of lottery play among lottery-only gamblers, except that more frequent players are concentrated in matchbox-style houses.

AGE - LOTTERY FREQUENCY			
Lottery	monthly or less	more than monthly	Total
<b>Age</b>			
<b>18-24</b>	74	50	124
Row%	60%	40%	100%
Col %	20%	16%	18%
<b>25-30</b>	68	61	129
Row%	53%	47%	100%
Col %	18%	19%	19%
<b>31-35</b>	37	44	81
Row%	46%	54%	100%
Col %	10%	14%	12%
<b>36-45</b>	78	58	136
Row%	57%	43%	100%
Col %	21%	18%	20%
<b>46-55</b>	58	55	113
Row%	51%	49%	100%
Col %	16%	17%	16%
<b>56-65</b>	38	30	68
Row%	56%	44%	100%
Col %	10%	9%	10%
<b>66-75</b>	11	21	32
Row%	34%	66%	100%
Col %	3%	7%	5%
<b>76+</b>	9	3	12
Row%	75%	25%	100%
Col %	2%	1%	2%
<b>Total</b>	373	322	695
Row%	54%	46%	100%
Col %	100%	100%	100%

The data show no clear relationships between age and frequency of lottery play among lottery-only gamblers.

GENDER - LOTTERY FREQUENCY			
Lottery	monthly or less	more than monthly	Total
<b>Gender</b>			
<b>Male</b>	211	190	401
Row%	53%	47%	100%
Col %	57%	59%	58%
<b>Female</b>	162	132	294
Row%	55%	45%	100%
Col %	43%	41%	42%
<b>Total</b>	373	322	695
Row%	54%	46%	100%
Col %	100%	100%	100%

The data suggest no clear association between gender and frequency of lottery play among lottery-only gambling respondents.

## RACE - LOTTERY FREQUENCY

Lottery	monthly or less	more than monthly	Total
<b>Race</b>			
<b>Black</b>	241	239	480
Row%	50%	50%	100%
Col %	65%	74%	69%
<b>Colored</b>	41	18	59
Row%	69%	31%	100%
Col %	11%	6%	8%
<b>Indian</b>	17	8	25
Row%	68%	32%	100%
Col %	5%	2%	4%
<b>White</b>	74	57	131
Row%	56%	44%	100%
Col %	20%	18%	19%
<b>Total</b>	373	322	695
Row%	54%	46%	100%
Col %	100%	100%	100%

The data show less frequent lottery play among Coloured and Indian lottery-only gamblers than among Black and White lottery-only gamblers.

## EMPLOYMENT STATUS - LOTTERY FREQUENCY

Lottery	monthly or less	more than monthly	Total
<b>Employment Status</b>			
<b>Full-time</b>	158	154	312
Row%	51%	49%	100%
Col %	42%	48%	45%
<b>Part-time</b>	30	29	59
Row%	51%	49%	100%
Col %	8%	9%	8%
<b>Occasional/Seasonal</b>	3	1	4
Row%	75%	25%	100%
Col %	1%	0%	1%
<b>Unemployed</b>	121	86	207
Row%	58%	42%	100%
Col %	32%	27%	30%
<b>Scholar/Student</b>	22	16	38
Row%	58%	42%	100%
Col %	6%	5%	5%
<b>Retired</b>	33	34	67
Row%	49%	51%	100%
Col %	9%	11%	10%
<b>Disabled</b>	6	1	7
Row%	86%	14%	100%
Col %	2%	0%	1%
<b>Not started school</b>	0	1	1
Row%	0%	100%	100%
Col %	0%	0%	0%
<b>Total</b>	373	322	695
Row%	54%	46%	100%
Col %	100%	100%	100%

The data show no clear relationships between employment status and frequency of lottery play among lottery-only gamblers.

GAMBLING SEVERITY - LOTTERY FREQUENCY			
Lottery Gambling severity	monthly or less	more than monthly	Total
<b>No risk</b>	286	223	509
Row%	56%	44%	100%
Col %	77%	69%	73%
<b>Low risk</b>	50	64	114
Row%	44%	56%	100%
Col %	13%	20%	16%
<b>Moderate risk</b>	27	27	54
Row%	50%	50%	100%
Col %	7%	8%	8%
<b>Problem gambling</b>	10	8	18
Row%	56%	44%	100%
Col %	3%	2%	3%
<b>Total</b>	373	322	695
Row%	54%	46%	100%
Col %	100%	100%	100%

The data suggest no association between frequency of lottery play among lottery-only gamblers and risk for problem gambling. This coheres with a general observation supported by the data set as a whole, that among major types of gambling activities in which South Africans engage, lottery appears to be the least likely to be associated with risk factors for problem gambling.

The relationship between attitudes to prevailing gambling policy and extent of risk for problem gambling may be thought important. We therefore asked respondents to indicate whether they think legal gambling should be more widely available than it is at present, is currently available to about the right extent, should be less available than it is at present, or should be altogether unavailable (i.e., all gambling should be illegal). The tables below display responses to this question, in comparison with risk for problem gambling and types of gambling settings respondents patronise.

ATTITUDE TOWARDS LEGAL GAMBLING - GAMBLING SEVERITY						
Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>“Legal gambling ...</b>						
<b>... should be more widely available.”</b>	90	129	89	67	31	406
Row%	22%	32%	22%	17%	8%	100%
Col%	7%	12%	29%	29%	32%	14%
<b>...is available to the right extent.”</b>	319	394	115	73	30	931
Row%	34%	42%	12%	8%	3%	100%
Col%	25%	37%	37%	32%	31%	31%
<b>... should be less available.”</b>	285	294	53	42	19	693
Row%	41%	42%	8%	6%	3%	100%
Col%	22%	27%	17%	18%	20%	23%
<b>... should be illegal.”</b>	415	274	40	30	13	672
Row%	62%	41%	6%	4%	2%	100%
Col%	32%	26%	13%	13%	13%	22%
<b>Don't know</b>	182	83	13	16	4	298
Row%	61%	28%	4%	5%	1%	100%
Col%	14%	8%	4%	7%	4%	10%
<b>Total</b>	1291	1074	310	228	97	3000
Row%	43%	36%	10%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

As risk for problem gambling rises, higher proportions of subjects favour wider availability of legal gambling. It has sometimes been suggested that people at higher risk for problem gambling might want the state to 'tie their hands' for them by restricting their access to gambling. These data provide evidence contrary to such a hypothesis.

<b>ATTITUDE TOWARDS LEGAL GAMBLING - GAMBLING LOCATION</b>									
<b>Location</b>	<b>Casinos</b>	<b>Other legal</b>	<b>Informal</b>	<b>None</b>	<b>All legal</b>	<b>Other legal and informal</b>	<b>Casinos and informal</b>	<b>All</b>	<b>Total</b>
<b>"Legal gambling ..."</b>									
... should be more widely available."	39	13	95	218	5	12	12	12	406
Row%	10%	3%	23%	54%	1%	3%	3%	3%	100%
Col%	19%	18%	25%	10%	18%	21%	17%	26%	14%
... is available to the right extent."	80	27	130	611	8	24	32	19	931
Row%	9%	3%	14%	66%	1%	3%	3%	2%	100%
Col%	39%	37%	35%	29%	29%	42%	45%	41%	31%
... should be less available."	52	17	65	506	12	12	21	9	693
Row%	8%	2%	9%	73%	2%	2%	3%	1%	100%
Col%	25%	23%	17%	24%	43%	21%	30%	20%	23%
... should be illegal."	31	11	63	546	3	7	6	5	672
Row%	5%	2%	9%	81%	0%	1%	1%	1%	100%
Col%	15%	15%	17%	25%	11%	12%	8%	11%	22%
Don't know	4	5	24	262	0	2	0	1	298
Row%	1%	2%	8%	88%	0%	1%	0%	0%	100%
Col%	2%	7%	6%	12%	0%	4%	0%	2%	10%
<b>Total</b>	<b>206</b>	<b>73</b>	<b>376</b>	<b>2143</b>	<b>28</b>	<b>57</b>	<b>71</b>	<b>46</b>	<b>3000</b>
Row%	7%	2%	13%	71%	1%	2%	2%	2%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Relative support for expansion of legal gambling facilities is higher among respondents who patronise only informal gambling venues than among respondents who patronise only legal casinos (whose median preference is for the status quo). This suggests that there is scope for shifting some gamblers from informal to legal participation by provision of broadened access.

An interesting question about problem gambling, which to our knowledge has never been investigated anywhere, is whether being affected by others' gambling behaviour is positively or negatively related to a person's own level of risk for problem gambling. We therefore asked respondents whether they had ever been seriously affected by the gambling of someone close to them. Below, we compare answers to this question with respondents' levels of risk for problem gambling.

<b>ANYONE WHOSE GAMBLING HAS AFFECTED YOU? - GAMBLING SEVERITY</b>						
<b>Categories</b>	<b>no gambling</b>	<b>no risk</b>	<b>low risk</b>	<b>moderate risk</b>	<b>problem gambling</b>	<b>Total</b>
<b>Is there anyone close to you whose gambling has seriously affected you or your family in the past 12 month?</b>						
<b>yes</b>	59	56	26	41	29	211
Row%	28%	27%	12%	19%	14%	100%
Col%	5%	5%	8%	18%	30%	7%
<b>no</b>	1232	1018	284	187	68	2789
Row%	44%	37%	10%	7%	2%	100%
Col%	95%	95%	92%	82%	70%	93%
<b>Total</b>	<b>1291</b>	<b>1074</b>	<b>310</b>	<b>228</b>	<b>97</b>	<b>3000</b>
Row%	43%	36%	10%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

7% of subjects report having been affected by someone else's gambling. This experience is clearly positively associated with risk for problem gambling. This suggests the possibilities that efforts to reduce current problem gambling may help to reduce future prevalence.

The following series of tables summarize responses to each item on the Gamblers Anonymous 20 Questions survey. These questions were only asked of the 1709 respondents in the sample who participate in gambling. We compare the responses on each item to types of gambling setting patronised by respondents, in search of information about the relative strengths of association between different forms of gambling and specific personal and social problems linked to gambling.

### GA20.1: LOST TIME FROM WORK? - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Have you ever lost time from work due to gambling?</b>									
<b>Yes</b>	7	6	29	26	0	4	8	9	89
Row%	8%	7%	33%	29%	0%	4%	9%	10%	100%
Col%	3%	8%	8%	3%	0%	7%	11%	20%	5%
<b>No</b>	199	67	347	826	28	53	63	36	1619
Row%	12%	4%	21%	51%	2%	3%	4%	2%	100%
Col%	97%	92%	92%	97%	100%	93%	89%	78%	95%
<b>Refused</b>	0	0	0	0	0	0	0	1	1
Row%	0%	0%	0%	0%	0%	0%	0%	100%	100%
Col%	0%	0%	0%	0%	0%	0%	0%	2%	0%
<b>Total</b>	206	73	376	852	28	57	71	46	1709
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

5% of gambling subjects report having lost time from work due to gambling. The proportion is more than twice as high among those who patronise only informal gambling venues as among those who patronise legal casinos. We speculate that this difference may be driven more by demographic variables associated with informal gambling than by aspects of gambling behaviour per se.

### GA20.2: GAMBLING MADE YOUR HOME LIFE UNHAPPY? - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Has gambling ever made your home life unhappy?</b>									
<b>Yes</b>	20	7	49	30	3	8	11	5	133
Row%	15%	5%	37%	23%	2%	6%	8%	4%	100%
Col%	10%	10%	13%	4%	11%	14%	15%	11%	8%
<b>No</b>	186	66	327	822	25	49	60	40	1575
Row%	12%	4%	21%	52%	2%	3%	4%	3%	100%
Col%	90%	90%	87%	96%	89%	86%	85%	87%	92%
<b>Refused</b>	0	0	0	0	0	0	0	1	1
Row%	0%	0%	0%	0%	0%	0%	0%	100%	100%
Col%	0%	0%	0%	0%	0%	0%	0%	2%	0%
<b>Total</b>	206	73	376	852	28	57	71	46	1709
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%



8% of gambling subjects report that gambling has (at some time) made their home life unhappy. The proportion is somewhat higher among those who patronise only informal gambling venues than among those who patronise legal casinos. We speculate that this difference may be driven more by demographic variables associated with informal gambling than by aspects of gambling behaviour per se.

GA20.3: GAMBLING AFFECTED YOUR REPUTATION? - GAMBLING LOCATION									
Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Has gambling affected your reputation?</b>									
<b>Yes</b>	9	5	39	26	2	7	9	6	103
Row%	9%	5%	38%	25%	2%	7%	9%	6%	100%
Col%	4%	7%	10%	3%	7%	12%	13%	13%	6%
<b>No</b>	197	68	337	826	26	50	62	39	1605
Row%	12%	4%	21%	51%	2%	3%	4%	2%	100%
Col%	96%	93%	90%	97%	93%	88%	87%	85%	94%
<b>Refused</b>	0	0	0	0	0	0	0	1	1
Row%	0%	0%	0%	0%	0%	0%	0%	100%	100%
Col%	0%	0%	0%	0%	0%	0%	0%	2%	0%
<b>Total</b>	206	73	376	852	28	57	71	46	1709
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

6% of gambling subjects report that gambling has (at some time) affected their reputations. The proportion is more than twice as high among those who patronise only informal gambling venues than among those who patronise legal casinos. We speculate that this difference may to some extent reflect differences in the extent to which informal and legal casinos can and do maintain discretion about customers' losses.

GA20.4: EVER FELT REMORSE AFTER GAMBLING? - GAMBLING LOCATION									
Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Have you ever felt remorse after gambling?</b>									
<b>Yes</b>	28	13	76	69	6	24	15	15	246
Row%	11%	5%	31%	28%	2%	10%	6%	6%	100%
Col%	14%	18%	20%	8%	21%	42%	21%	33%	14%
<b>No</b>	178	60	300	783	22	33	56	30	1462
Row%	12%	4%	21%	54%	2%	2%	4%	2%	100%
Col%	86%	82%	80%	92%	79%	58%	79%	65%	86%
<b>Refused</b>	0	0	0	0	0	0	0	1	1
Row%	0%	0%	0%	0%	0%	0%	0%	100%	100%
Col%	0%	0%	0%	0%	0%	0%	0%	2%	0%
<b>Total</b>	206	73	376	852	28	57	71	46	1709
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

14% of gambling subjects report that they have at some time felt remorse after gambling. This rate among gamblers who patronise legal casinos matches the rate among gamblers as a whole. A higher proportion of people who patronise only informal gambling venues, 20%, report experiences of gambling-related remorse.

## GA20.5: EVER GAMBLED TO SOLVE FINANCIAL DIFFICULTIES? - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Have you ever gambled to get with which to pay debts or otherwise solve financial difficulties?</b>									
<b>Yes</b>	18	8	67	48	5	11	14	15	186
Row%	10%	4%	36%	26%	3%	6%	8%	8%	100%
Col%	9%	11%	18%	6%	18%	19%	20%	33%	11%
<b>No</b>	188	65	309	804	23	46	57	30	1522
Row%	12%	4%	20%	53%	2%	3%	4%	2%	100%
Col%	91%	89%	82%	94%	82%	81%	80%	65%	89%
<b>Refused</b>	0	0	0	0	0	0	0	1	1
Row%	0%	0%	0%	0%	0%	0%	0%	100%	100%
Col%	0%	0%	0%	0%	0%	0%	0%	2%	0%
<b>Total</b>	206	73	376	852	28	57	71	46	1709
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

11% of gambling subjects report gambling at least once to try to solve financial difficulties. The proportion is twice as high among those who patronise only informal gambling venues as among those who patronise legal casinos. We speculate that this difference may be driven more by demographic variables associated with informal gambling than by aspects of gambling behaviour per se.

## GA20.6: GAMBLING EVER MADE YOU LESS AMBITIOUS? - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Has gambling ever made you less ambitious or efficient?</b>									
<b>Yes</b>	12	8	46	33	3	10	7	9	128
Row%	9%	6%	36%	26%	2%	8%	5%	7%	100%
Col%	6%	11%	12%	4%	11%	18%	10%	20%	7%
<b>No</b>	194	65	330	819	25	47	64	36	1580
Row%	12%	4%	21%	52%	2%	3%	4%	2%	100%
Col%	94%	89%	88%	96%	89%	82%	90%	78%	92%
<b>Refused</b>	0	0	0	0	0	0	0	1	1
Row%	0%	0%	0%	0%	0%	0%	0%	100%	100%
Col%	0%	0%	0%	0%	0%	0%	0%	2%	0%
<b>Total</b>	206	73	376	852	28	57	71	46	1709
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

7% of gambling subjects report that on some occasion or occasions, gambling has made them less ambitious. The proportion is twice as high among those who patronise only informal gambling venues as among those who patronise legal casinos. We speculate that this difference may be driven more by demographic variables associated with informal gambling than by aspects of gambling behaviour per se.

## GA20.7: EVER TRIED TO WIN BACK LOST MONEY? - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Have you ever felt that you must return as soon as possible, after having lost, to try and win back the money you have lost?</b>									
<b>Yes</b>	20	13	76	50	6	14	9	13	201
Row%	10%	6%	38%	25%	3%	7%	4%	6%	100%
Col%	10%	18%	20%	6%	21%	25%	13%	28%	12%
<b>No</b>	186	60	300	802	22	43	62	32	1507
Row%	12%	4%	20%	53%	1%	3%	4%	2%	100%
Col%	90%	82%	80%	94%	79%	75%	87%	70%	88%
<b>Refused</b>	0	0	0	0	0	0	0	1	1
Row%	0%	0%	0%	0%	0%	0%	0%	100%	100%
Col%	0%	0%	0%	0%	0%	0%	0%	2%	0%
<b>Total</b>	206	73	376	852	28	57	71	46	1709
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

12% of gambling subjects report that on some occasions or occasions, they have gambled to try to win back lost money. The proportion is twice as high among those who patronize only informal gambling venues as among those who patronise legal casinos. We speculate that this difference may be driven more by demographic variables associated with informal gambling than by aspects of gambling behaviour per se.

## GA20.8: EVER FELT THE URGE TO WIN MORE? - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>After a win, have you ever felt a strong urge to return and win more?</b>									
<b>Yes</b>	29	10	91	73	8	24	14	22	271
Row%	11%	4%	34%	27%	3%	9%	5%	8%	100%
Col%	14%	14%	24%	9%	29%	42%	20%	48%	16%
<b>No</b>	177	63	285	779	20	33	57	23	1437
Row%	12%	4%	20%	54%	1%	2%	4%	2%	100%
Col%	86%	86%	76%	91%	71%	58%	80%	50%	84%
<b>Refused</b>	0	0	0	0	0	0	0	1	1
Row%	0%	0%	0%	0%	0%	0%	0%	100%	100%
Col%	0%	0%	0%	0%	0%	0%	0%	2%	0%
<b>Total</b>	206	73	376	852	28	57	71	46	1709
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

16% of gambling subjects report that on some occasion or occasions, they have felt an urge to try to win more. The proportion is notably higher among those who patronise only informal gambling venues than among those who patronise legal casinos. We speculate that this difference may be driven more by demographic variables associated with informal gambling than by aspects of gambling behaviour per se.

### GA20.9: EVER GAMBLED UNTIL YOUR LAST RAND WAS GONE? - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Have you ever gambled until your last Rand was gone?</b>									
<b>Yes</b>	21	12	81	52	10	13	18	16	223
Row%	9%	5%	36%	23%	4%	6%	8%	7%	100%
Col%	10%	16%	22%	6%	36%	23%	25%	35%	13%
<b>No</b>	185	61	295	800	18	44	53	29	1485
Row%	12%	4%	20%	54%	1%	3%	4%	2%	100%
Col%	90%	84%	78%	94%	64%	77%	75%	63%	87%
<b>Refused</b>	0	0	0	0	0	0	0	1	1
Row%	0%	0%	0%	0%	0%	0%	0%	100%	100%
Col%	0%	0%	0%	0%	0%	0%	0%	2%	0%
<b>Total</b>	206	73	376	852	28	57	71	46	1709
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

13% of gambling subjects report that on some occasion or occasions, they have gambled away their last Rand. The proportion is more than twice as high among those who patronise only informal gambling venues as among those who patronise legal casinos. Our other data suggest that much of this difference is due to the fact that informal gamblers tend to be significantly less wealthy than legal casino customers.

### GA20.10: EVER BORROWED TO FINANCE GAMBLING? - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Have you ever borrowed to finance your gambling?</b>									
<b>Yes</b>	9	6	39	22	1	4	6	6	93
Row%	10%	6%	42%	24%	1%	4%	6%	6%	100%
Col%	4%	8%	10%	3%	4%	7%	8%	13%	5%
<b>No</b>	197	67	337	830	27	53	65	39	1615
Row%	12%	4%	21%	51%	2%	3%	4%	2%	100%
Col%	96%	92%	90%	97%	96%	93%	92%	85%	94%
<b>Refused</b>	0	0	0	0	0	0	0	1	1
Row%	0%	0%	0%	0%	0%	0%	0%	100%	100%
Col%	0%	0%	0%	0%	0%	0%	0%	2%	0%
<b>Total</b>	206	73	376	852	28	57	71	46	1709
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

5% of gambling subjects report that on some occasion or occasions, they have borrowed to finance gambling. The proportion is more than twice as high among those who patronise only informal gambling venues as among those who patronise legal casinos. We speculate that this difference may be driven more by demographic variables associated with informal gambling than by aspects of gambling behaviour per se.

## GA20.11: EVER SOLD PROPERTY TO FINANCE GAMBLING? - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Have you ever sold any real or personal property to finance your gambling?</b>									
<b>Yes</b>	5	3	13	21	1	3	3	2	51
Row%	10%	6%	25%	41%	2%	6%	6%	4%	100%
Col%	2%	4%	3%	2%	4%	5%	4%	4%	3%
<b>No</b>	201	70	363	831	27	54	68	43	1657
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	98%	96%	97%	98%	96%	95%	96%	93%	97%
<b>Refused</b>	0	0	0	0	0	0	0	1	1
Row%	0%	0%	0%	0%	0%	0%	0%	100%	100%
Col%	0%	0%	0%	0%	0%	0%	0%	2%	0%
<b>Total</b>	206	73	376	852	28	57	71	46	1709
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

3% of gambling subjects report that on some occasion or occasions, they have sold property to finance gambling. The proportion is one-third higher among those who patronise only informal gambling venues as among those who patronise legal casinos. We speculate that this difference may be driven more by demographic variables associated with informal gambling than by aspects of gambling behaviour per se.

## GA20.12: "GAMBLING MONEY" / EVER USED HOUSEHOLD MONEY FOR GAMBLING? - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Have you ever been reluctant to use "gambling money" for normal expenditure or have you ever used money earmarked for household necessities for gambling?</b>									
<b>Yes</b>	9	3	39	29	2	7	7	8	104
Row%	9%	3%	38%	28%	2%	7%	7%	8%	100%
Col%	4%	4%	10%	3%	7%	12%	10%	17%	6%
<b>No</b>	197	70	337	823	26	50	64	37	1604
Row%	12%	4%	21%	51%	2%	3%	4%	2%	100%
Col%	96%	96%	90%	97%	93%	88%	90%	80%	94%
<b>Refused</b>	0	0	0	0	0	0	0	1	1
Row%	0%	0%	0%	0%	0%	0%	0%	100%	100%
Col%	0%	0%	0%	0%	0%	0%	0%	2%	0%
<b>Total</b>	206	73	376	852	28	57	71	46	1709
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

6% of gambling subjects report that on some occasion or occasions, they have used money earmarked for household accounts to finance gambling. The proportion is more than twice as high among those who patronise only informal gambling venues as among those who patronise legal casinos. We speculate that this difference may be driven more by demographic variables associated with informal gambling than by aspects of gambling behaviour per se.

### GA20.13: GAMBLING EVER MADE YOU CARELESS OF FAMILY'S OR OWN WELFARE? - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Has gambling ever made you careless of the welfare of you family or yourself or yourself?</b>									
<b>Yes</b>	9	4	27	21	2	6	3	7	79
Row%	11%	5%	34%	27%	3%	8%	4%	9%	100%
Col%	4%	5%	7%	2%	7%	11%	4%	15%	5%
<b>No</b>	197	69	349	831	26	51	68	38	1629
Row%	12%	4%	21%	51%	2%	3%	4%	2%	100%
Col%	96%	95%	93%	98%	93%	89%	96%	83%	95%
<b>Refused</b>	0	0	0	0	0	0	0	1	1
Row%	0%	0%	0%	0%	0%	0%	0%	100%	100%
Col%	0%	0%	0%	0%	0%	0%	0%	2%	0%
<b>Total</b>	206	73	376	852	28	57	71	46	1709
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

5% of gambling subjects report that on some occasion or occasions, gambling has made them careless of their family's or their own welfare. The proportion is notably higher among those who patronise only informal gambling venues than among those who patronise legal casinos. We speculate that this difference may be driven more by demographic variables associated with informal gambling than by aspects of gambling behaviour per se.

### GA20.14: EVER GAMBLED LONGER THAN PLANED? - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Have you ever gambled longer than planed?</b>									
<b>Yes</b>	34	12	70	34	6	15	14	17	202
Row%	17%	6%	35%	17%	3%	7%	7%	8%	100%
Col%	17%	16%	19%	4%	21%	26%	20%	37%	12%
<b>No</b>	172	61	306	818	22	42	57	28	1506
Row%	11%	4%	20%	54%	1%	3%	4%	2%	100%
Col%	83%	84%	81%	96%	79%	74%	80%	61%	88%
<b>Refused</b>	0	0	0	0	0	0	0	1	1
Row%	0%	0%	0%	0%	0%	0%	0%	100%	100%
Col%	0%	0%	0%	0%	0%	0%	0%	2%	0%
<b>Total</b>	206	73	376	852	28	57	71	46	1709
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

12% of gambling subjects reported that on at least one occasion they have gambled for longer than they planned. Proportions are similar as between patrons of informal gambling venues and legal casinos.

### GA20.15: EVER GAMBLED TO ESCAPE TROUBLE? - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Have you ever gambled to avoid worry or trouble?</b>									
<b>Yes</b>	16	4	56	33	5	12	10	12	148
Row%	11%	3%	38%	22%	3%	8%	7%	8%	100%
Col%	8%	5%	15%	4%	18%	21%	14%	26%	9%
<b>No</b>	190	69	320	819	23	45	61	33	1560
Row%	12%	4%	21%	53%	1%	3%	4%	2%	100%
Col%	92%	95%	85%	96%	82%	79%	86%	72%	91%
<b>Refused</b>	0	0	0	0	0	0	0	1	1
Row%	0%	0%	0%	0%	0%	0%	0%	100%	100%
Col%	0%	0%	0%	0%	0%	0%	0%	2%	0%
<b>Total</b>	206	73	376	852	28	57	71	46	1709
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

9% of gambling subjects report that on at least one occasion they have gambled to escape trouble. The proportion is notably higher among those who patronise only informal gambling venues than among those who patronise legal casinos. We speculate that this difference may be driven more by demographic variables associated with informal gambling than by aspects of gambling behaviour per se.

### GA20.16: EVER COMMITTED OR CONSIDER AN ILLEGAL ACT TO FINANCE GAMBLING? - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Have you ever committed or considered an illegal act to finance your gambling?</b>									
<b>Yes</b>	6	5	13	17	1	4	2	2	50
Row%	12%	10%	26%	34%	2%	8%	4%	4%	100%
Col%	3%	7%	3%	2%	4%	7%	3%	4%	3%
<b>No</b>	200	68	363	835	27	53	69	43	1658
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	97%	93%	97%	98%	96%	93%	97%	93%	97%
<b>Refused</b>	0	0	0	0	0	0	0	1	1
Row%	0%	0%	0%	0%	0%	0%	0%	100%	100%
Col%	0%	0%	0%	0%	0%	0%	0%	2%	0%
<b>Total</b>	206	73	376	852	28	57	71	46	1709
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

3% of gambling subjects report that on at least one occasion they have committed an illegal act to finance gambling. Interestingly, proportions are similar as between patrons of informal gambling venues and legal casinos.

### GA20.17: DIFFICULTY SLEEPING, DUE TO GAMBLING? - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Has gambling caused you difficulty in sleeping?</b>									
<b>Yes</b>	13	6	30	25	3	8	6	6	97
Row%	13%	6%	31%	26%	3%	8%	6%	6%	100%
Col%	6%	8%	8%	3%	11%	14%	8%	13%	6%
<b>No</b>	193	67	346	827	25	49	65	39	1611
Row%	12%	4%	21%	51%	2%	3%	4%	2%	100%
Col%	94%	92%	92%	97%	89%	86%	92%	85%	94%
<b>Refused</b>	0	0	0	0	0	0	0	1	1
Row%	0%	0%	0%	0%	0%	0%	0%	100%	100%
Col%	0%	0%	0%	0%	0%	0%	0%	2%	0%
<b>Total</b>	206	73	376	852	28	57	71	46	1709
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

6% of gambling subjects report that on at least one occasion they have had difficulty sleeping due to gambling. The proportion is somewhat higher among those who patronise only informal gambling venues than among those who patronise legal casinos.

### GA20.18: URGE TO GAMBLE DUE TO FRUSTRATION? - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Do arguments, disappointments or frustration bring on an urge to gamble?</b>									
<b>Yes</b>	14	7	32	21	3	8	8	7	100
Row%	14%	7%	32%	21%	3%	8%	8%	7%	100%
Col%	7%	10%	9%	2%	11%	14%	11%	15%	6%
<b>No</b>	192	66	344	831	25	49	63	38	1608
Row%	12%	4%	21%	52%	2%	3%	4%	2%	100%
Col%	93%	90%	91%	98%	89%	86%	89%	83%	94%
<b>Refused</b>	0	0	0	0	0	0	0	1	1
Row%	0%	0%	0%	0%	0%	0%	0%	100%	100%
Col%	0%	0%	0%	0%	0%	0%	0%	2%	0%
<b>Total</b>	206	73	376	852	28	57	71	46	1709
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

6% of gambling subjects report that on at least one occasion they have gambled due to frustration. Proportions are similar as between patrons of informal gambling venues and patrons of legal casinos.



### GA20.19: URGE TO CELEBRATE BY GAMBLING? - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Do you have the urge to celebrate any good fortune by a few hours gambling?</b>									
<b>Yes</b>	20	6	51	29	2	7	15	11	141
Row%	14%	4%	36%	21%	1%	5%	11%	8%	100%
Col%	10%	8%	14%	3%	7%	12%	21%	24%	8%
<b>No</b>	186	67	325	823	26	50	56	34	1567
Row%	12%	4%	21%	53%	2%	3%	4%	2%	100%
Col%	90%	92%	86%	97%	93%	88%	79%	74%	92%
<b>Refused</b>	0	0	0	0	0	0	0	1	1
Row%	0%	0%	0%	0%	0%	0%	0%	100%	100%
Col%	0%	0%	0%	0%	0%	0%	0%	2%	0%
<b>Total</b>	206	73	376	852	28	57	71	46	1709
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

8% of gambling subjects report that on at least one occasion they have experienced an urge to celebrate by gambling. The proportion is somewhat higher among those who patronise only informal gambling venues than among those who patronise legal casinos.

### GA20.20: EVER CONSIDERED SUICIDE, DUE TO GAMBLING? - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Have you ever considered suicide as a result of gambling?</b>									
<b>Yes</b>	5	3	9	12	0	0	3	1	33
Row%	15%	9%	27%	36%	0%	0%	9%	3%	100%
Col%	2%	4%	2%	1%	0%	0%	4%	2%	2%
<b>No</b>	201	70	367	840	28	57	68	44	1675
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	98%	96%	98%	99%	100%	100%	96%	96%	98%
<b>Refused</b>	0	0	0	0	0	0	0	1	1
Row%	0%	0%	0%	0%	0%	0%	0%	100%	100%
Col%	0%	0%	0%	0%	0%	0%	0%	2%	0%
<b>Total</b>	206	73	376	852	28	57	71	46	1709
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

2% of gambling subjects report that on at least one occasion they have gambled due to frustration. Very small numbers make analysis of this variable, let alone speculation based on it, meaningless.

We asked those respondents who reported participation in gambling to report the type of gambling on which they have spent the most money, and compared the responses with risk for problem gambling. The results are displayed in the table below.

## MOST MONEY SPENT - GAMBLING SEVERITY

Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Games</b>					
<b>Bingo</b>	8	0	1	0	9
Row%	89%	0%	11%	0%	100%
Col%	1%	0%	0%	0%	1%
<b>Dice games for money</b>	11	11	15	15	52
Row%	21%	21%	29%	29%	100%
Col%	1%	4%	7%	15%	3%
<b>Roulette</b>	12	3	5	2	22
Row%	55%	14%	23%	9%	100%
Col%	1%	1%	2%	2%	1%
<b>Card games for money</b>	25	7	8	10	50
Row%	50%	14%	16%	20%	100%
Col%	2%	2%	4%	10%	3%
<b>Slot machines</b>	82	36	19	4	141
Row%	58%	26%	13%	3%	100%
Col%	8%	12%	8%	4%	8%
<b>Horse racing or other animal betting games</b>	31	8	7	2	48
Row%	65%	17%	15%	4%	100%
Col%	3%	3%	3%	2%	3%
<b>Sport betting</b>	14	5	9	1	29
Row%	48%	17%	31%	3%	100%
Col%	1%	2%	4%	1%	2%
<b>Electronic Gaming Machines / Grandslots</b>	28	10	9	6	53
Row%	53%	19%	17%	11%	100%
Col%	3%	3%	4%	6%	3%
<b>Other</b>	2	1	1	0	4
Row%	50%	25%	25%	0%	100%
Col%	0%	0%	0%	0%	0%
<b>Total</b>	1074	310	228	97	1709
Row%	63%	18%	13%	6%	100%
Col%	200%	58%	43%	18%	319%

By far the greatest differences in game ranking for “most money spent” between gambling respondents at lower and higher risk for problem gambling are between dice games for money and card games for money. 29% and 20%, respectively, of respondents who spend the most money on dice games and card games are measured as being at high risk for problem gambling. By contrast, among gamblers who spend the most money on slot machines, the prevalence of high risk for problem gambling matches that in the overall sample (including non-gamblers).

### FREQUENCY: LUCKY DRAWS - GAMBLING SEVERITY

Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Frequency</b>					
<b>Weekly</b>	11	2	3	5	21
Row%	52%	10%	14%	24%	100%
Col%	10%	9%	17%	36%	13%
<b>Monthly</b>	16	6	5	5	32
Row%	50%	19%	16%	16%	100%
Col%	15%	26%	28%	36%	20%
<b>Less than monthly</b>	49	13	8	3	73
Row%	67%	18%	11%	4%	100%
Col%	46%	57%	44%	21%	45%
<b>Never</b>	29	1	1	1	32
Row%	91%	3%	3%	3%	100%
Col%	27%	4%	6%	7%	20%
<b>Don't know</b>	2	1	1	0	4
Row%	50%	25%	25%	0%	100%
Col%	2%	4%	6%	0%	2%
<b>Total</b>	107	23	18	14	162
Row%	66%	14%	11%	9%	100%
Col%	100%	100%	100%	100%	100%

Though absolute numbers of frequent (monthly or more) participants in lucky draws are very small, a remarkably high proportion of these gamblers are measured as being at high risk for problem gambling. Examination of the underlying data indicates that most of these are people with very low incomes and wealth, for whom almost any non-trivial pattern of expenditure implies some element of household hardship, that is, consequences that are likely to be reflected in PGSI scores.

We asked those respondents who reported participation in each type of game to indicate the frequency with which they played the type of game in question during the preceding 12 months. We compare these responses with level of risk for problem gambling in the table below. We exclude from the display types of games for which levels of total participation are too low to yield meaningful comparisons.

### FREQUENCY: SCRATCH CARDS - GAMBLING SEVERITY

Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Frequency:</b>					
<b>Daily</b>	1	1	0	0	2
Row%	50%	50%	0%	0%	100%
Col%	0%	1%	0%	0%	1%
<b>Weekly</b>	39	14	15	9	77
Row%	51%	18%	19%	12%	100%
Col%	16%	18%	26%	36%	19%
<b>Monthly</b>	47	27	13	11	98
Row%	48%	28%	13%	11%	100%
Col%	20%	34%	23%	44%	25%
<b>Less than monthly</b>	75	22	22	4	123
Row%	61%	18%	18%	3%	100%
Col%	32%	28%	39%	16%	31%

### FREQUENCY: SCRATCH CARDS - GAMBLING SEVERITY (continued)

Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Frequency:</b>					
<b>Never</b>	67	13	5	1	86
Row%	78%	15%	6%	1%	100%
Col%	28%	16%	9%	4%	22%
<b>Don't know</b>	8	2	2	0	12
Row%	67%	17%	17%	0%	100%
Col%	3%	3%	4%	0%	3%
<b>Total</b>	237	79	57	25	398
Row%	60%	20%	14%	6%	100%
Col%	100%	100%	100%	100%	100%

36% of respondents who reported playing scratch cards and are measured as at high risk for problem gambling reported playing scratch cards weekly, contrasted with 16% of scratch card players measured as at no risk for problem gambling.

### FREQUENCY: FAFI / ICHINA - GAMBLING SEVERITY

Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Frequency</b>					
<b>Daily</b>	17	18	22	14	71
Row%	24%	25%	31%	20%	100%
Col%	20%	33%	39%	50%	32%
<b>Weekly</b>	23	15	13	8	59
Row%	39%	25%	22%	14%	100%
Col%	0%	1%	1%	2%	0%
<b>Monthly</b>	7	9	6	1	23
Row%	30%	39%	26%	4%	100%
Col%	8%	17%	11%	4%	10%
<b>Less than monthly</b>	10	5	8	3	26
Row%	38%	19%	31%	12%	100%
Col%	12%	9%	14%	11%	12%
<b>Never</b>	23	7	5	2	37
Row%	62%	19%	14%	5%	100%
Col%	27%	13%	9%	7%	17%
<b>Don't know</b>	5	0	2	0	7
Row%	71%	0%	29%	0%	100%
Col%	6%	0%	4%	0%	3%
<b>Total</b>	85	54	56	28	223
Row%	38%	24%	25%	13%	100%
Col%	100%	100%	100%	100%	100%

50% of respondents who reported playing fafi / iChina and measured as at high risk for problem gambling reported playing fafi or iChina daily, as contrasted with 20% of fafi / iChina players measured as at no risk for problem gambling.

### FREQUENCY: LOTTERY / LOTTO - GAMBLING SEVERITY

Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Frequency</b>					
<b>Daily</b>	4	1	2	3	10
Row%	40%	10%	20%	30%	100%
Col%	0%	0%	1%	4%	1%
<b>Weekly</b>	383	141	102	48	674
Row%	57%	21%	15%	7%	100%
Col%	42%	54%	55%	62%	47%
<b>Monthly</b>	246	65	47	17	375
Row%	66%	17%	13%	5%	100%
Col%	27%	25%	25%	22%	26%
<b>Less than monthly</b>	187	45	30	4	266
Row%	70%	17%	11%	2%	100%
Col%	20%	17%	16%	5%	18%
<b>Never</b>	94	9	6	4	113
Row%	83%	8%	5%	4%	100%
Col%	10%	3%	3%	5%	8%
<b>Don't know</b>	6	2	0	1	9
Row%	67%	22%	0%	11%	100%
Col%	1%	1%	0%	1%	1%
<b>Total</b>	920	263	187	77	1447
Row%	64%	18%	13%	5%	100%
Col%	100%	100%	100%	100%	100%

57% of weekly lottery players are measured as at no risk for problem gambling. Among lottery players who are measured as at high risk for problem gambling, the majority (62%) report playing weekly.

### FREQUENCY: DICE GAMES - GAMBLING SEVERITY

Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Frequency</b>					
<b>Daily</b>	0	1	4	4	9
Row%	0%	11%	44%	44%	100%
Col%	0%	4%	14%	17%	8%
<b>Weekly</b>	4	4	11	7	26
Row%	15%	15%	42%	27%	100%
Col%	11%	17%	39%	29%	23%
<b>Monthly</b>	4	6	4	5	19
Row%	21%	32%	21%	26%	100%
Col%	11%	26%	14%	21%	17%
<b>Less than monthly</b>	7	2	7	3	19
Row%	37%	11%	37%	16%	100%
Col%	18%	9%	25%	13%	17%
<b>Never</b>	21	9	1	5	36
Row%	58%	25%	3%	14%	100%
Col%	55%	39%	4%	21%	32%
<b>Don't know</b>	2	1	1	0	4
Row%	50%	25%	25%	0%	100%
Col%	5%	4%	4%	0%	4%
<b>Total</b>	38	23	28	24	113
Row%	34%	20%	25%	21%	100%
Col%	100%	100%	100%	100%	100%

Almost 50% of dice players who are measured as being at high risk for problem gambling play weekly or more. By contrast, only 11% of dice players measured as at no risk for problem gambling play that frequently.

FREQUENCY: ROULETTE - GAMBLING SEVERITY					
Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Frequency</b>					
<b>Daily</b>	0	0	0	1	1
Row%	0%	0%	0%	100%	100%
Col%	0%	0%	0%	14%	2%
<b>Weekly</b>	3	0	1	1	5
Row%	60%	0%	20%	20%	100%
Col%	11%	0%	17%	14%	10%
<b>Monthly</b>	4	3	2	1	10
Row%	40%	30%	20%	10%	100%
Col%	15%	27%	33%	14%	20%
<b>Less than monthly</b>	12	5	3	2	22
Row%	55%	23%	14%	9%	100%
Col%	44%	45%	50%	29%	43%
<b>Never</b>	6	3	0	1	10
Row%	60%	30%	0%	10%	100%
Col%	22%	27%	0%	14%	20%
<b>Don't know</b>	2	0	0	1	3
Row%	67%	0%	0%	33%	100%
Col%	2%	0%	0%	5%	2%
<b>Total</b>	27	11	6	7	51
Row%	53%	22%	12%	14%	100%
Col%	100%	100%	100%	100%	100%

Very few respondents, including those measured as at high risk for problem gambling, play roulette even as frequently as monthly.

FREQUENCY: CARD GAMES - GAMBLING SEVERITY					
Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Frequency</b>					
<b>Daily</b>	1	2	6	8	17
Row%	6%	12%	35%	47%	100%
Col%	1%	5%	22%	35%	11%
<b>Weekly</b>	13	5	5	7	30
Row%	43%	17%	17%	23%	100%
Col%	19%	14%	19%	17%	470%
<b>Monthly</b>	9	4	3	4	20
Row%	45%	20%	15%	20%	100%
Col%	13%	11%	11%	17%	13%
<b>Less than monthly</b>	15	13	10	0	38
Row%	39%	34%	26%	0%	100%
Col%	22%	35%	37%	0%	25%
<b>Never</b>	26	12	2	4	44
Row%	59%	27%	5%	9%	100%
Col%	38%	32%	7%	17%	28%
<b>Don't know</b>	4	1	1	0	6
Row%	67%	17%	17%	0%	100%
Col%	6%	3%	4%	0%	4%
<b>Total</b>	68	37	27	23	155
Row%	44%	24%	17%	15%	100%
Col%	100%	100%	100%	100%	100%

82% of respondents who reported playing card games for money on a daily basis were measured as being at either moderate or high risk for problem gambling. 43% of respondents who reported playing card games for money on a weekly basis were measured as being at no risk for problem gambling.

FREQUENCY: SLOT MACHINES - GAMBLING SEVERITY					
Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Frequency</b>					
<b>Daily</b>	0	1	0	1	2
Row%	0%	50%	0%	50%	100%
Col%	0%	1%	0%	5%	1%
<b>Weekly</b>	1	11	7	2	21
Row%	5%	52%	33%	10%	100%
Col%	1%	15%	15%	11%	6%
<b>Monthly</b>	38	22	19	8	87
Row%	44%	25%	22%	9%	100%
Col%	0%	0%	0%	0%	0%
<b>Less than monthly</b>	90	23	14	6	133
Row%	68%	17%	11%	5%	100%
Col%	47%	31%	30%	32%	40%
<b>Never</b>	54	13	6	2	75
Row%	72%	17%	8%	3%	100%
Col%	28%	18%	13%	11%	23%
<b>Don't know</b>	7	4	0	0	11
Row%	64%	36%	0%	0%	100%
Col%	4%	5%	0%	0%	3%
<b>Total</b>	190	74	46	19	329
Row%	58%	22%	14%	6%	100%
Col%	100%	100%	100%	100%	100%

Very few respondents play slot machines more frequently than monthly. About 50% of those who do play slot machines as frequently as weekly are measured as being at low risk for problem gambling.

FREQUENCY: HORSE RACING AND OTHER ANIMAL BETTING GAMES - GAMBLING SEVERITY					
Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Frequency</b>					
<b>Daily</b>	2	1	1	0	4
Row%	50%	25%	25%	0%	100%
Col%	2%	4%	5%	0%	2%
<b>Weekly</b>	14	5	4	4	27
Row%	52%	19%	15%	15%	100%
Col%	14%	19%	19%	25%	16%
<b>Monthly</b>	10	9	5	3	27
Row%	37%	33%	19%	11%	100%
Col%	10%	35%	24%	19%	16%
<b>Less than monthly</b>	34	6	9	5	54
Row%	63%	11%	17%	9%	100%
Col%	34%	23%	43%	31%	33%
<b>Never</b>	36	4	1	4	45
Row%	80%	9%	2%	9%	100%
Col%	1%	0%	0%	1%	1%

### FREQUENCY: HORSE RACING AND OTHER ANIMAL BETTING GAMES - GAMBLING SEVERITY (continued)

Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Frequency</b>					
<b>Don't know</b>	5	1	1	0	7
Row%	71%	14%	14%	0%	100%
Col%	5%	4%	5%	0%	4%
<b>Total</b>	101	26	21	16	164
Row%	62%	16%	13%	10%	100%
Col%	100%	100%	100%	100%	100%

The data suggest no clear relationship between frequency of betting on horse racing or other animal events and level of risk for problem gambling.

### FREQUENCY: SPORT BETTING - GAMBLING SEVERITY

Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Frequency</b>					
<b>Daily</b>	0	0	2	0	2
Row%	0%	0%	100%	0%	100%
Col%	0%	0%	7%	0%	2%
<b>Weekly</b>		7	9	2	30
Row%	40%	23%	30%	7%	100%
Col%	23%	23%	32%	12%	23%
<b>Monthly</b>	9	5	6	6	26
Row%	35%	19%	23%	23%	100%
Col%	17%	17%	21%	35%	20%
<b>Less than monthly</b>	20	11	9	8	48
Row%	42%	23%	19%	17%	100%
Col%	38%	37%	32%	47%	38%
<b>Never</b>	9	7	1	1	18
Row%	50%	39%	6%	6%	100%
Col%	17%	23%	4%	6%	14%
<b>Don't know</b>	3	0	1	0	4
Row%	75%	0%	25%	0%	100%
Col%	6%	0%	4%	0%	3%
<b>Total</b>	53	30	28	17	128
Row%	41%	23%	22%	13%	100%
Col%	100%	100%	100%	100%	100%

The data suggest no clear relationship between frequency of sports betting and level of risk for problem gambling.

We asked respondents who play the Lottery how many lines they buy per draw on average. We compare the responses with level of risk for problem gambling in the table below.



## NUMBER OF LOTTERY LINES USUALLY BOUGHT - GAMBLING SEVERITY

Categories Lottery Lines	no risk	low risk	moderate risk	problem gambling	Total
<b>1</b>	83	20	16	3	122
Row%	68%	16%	13%	2%	100%
Col%	9%	8%	9%	4%	8%
<b>2</b>	238	65	28	11	342
Row%	70%	19%	8%	3%	100%
Col%	26%	25%	15%	14%	24%
<b>3</b>	74	23	15	16	128
Row%	58%	18%	12%	13%	100%
Col%	8%	9%	8%	21%	9%
<b>4</b>	231	60	54	14	359
Row%	64%	17%	15%	4%	100%
Col%	25%	23%	29%	18%	25%
<b>5</b>	36	10	13	6	65
Row%	55%	15%	20%	9%	100%
Col%	4%	4%	7%	8%	4%
<b>6</b>	34	21	17	4	76
Row%	45%	28%	22%	5%	100%
Col%	4%	8%	9%	5%	5%
<b>7</b>	10	3	2	1	16
Row%	63%	19%	13%	6%	100%
Col%	1%	1%	1%	1%	1%
<b>8</b>	105	25	12	5	147
Row%	71%	17%	8%	3%	100%
Col%	11%	10%	6%	6%	10%
<b>9</b>	3	5	1	0	9
Row%	33%	56%	11%	0%	100%
Col%	0%	2%	1%	0%	1%
<b>10</b>	17	4	6	1	28
Row%	61%	14%	21%	4%	100%
Col%	2%	2%	3%	1%	2%
<b>11</b>	0	1	0	0	1
Row%	0%	100%	0%	0%	100%
Col%	0%	0%	0%	0%	0%
<b>12</b>	6	3	0	1	10
Row%	60%	30%	0%	10%	100%
Col%	1%	1%	0%	1%	1%
<b>14</b>	2	1	2	0	5
Row%	40%	20%	40%	0%	100%
Col%	0%	0%	1%	0%	0%
<b>15</b>	1	2	0	0	3
Row%	33%	67%	0%	0%	100%
Col%	0%	1%	0%	0%	0%
<b>16</b>	5	1	2	0	8
Row%	63%	13%	25%	0%	100%
Col%	1%	0%	1%	0%	1%
<b>20</b>	16	5	2	3	26
Row%	62%	19%	8%	12%	100%
Col%	2%	2%	1%	4%	2%

## NUMBER OF LOTTERY LINES USUALLY BOUGHT - GAMBLING SEVERITY (continued)

Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Lottery Lines</b>					
<b>24</b>	3	0	1	0	4
Row%	75%	0%	25%	0%	100%
Col%	0%	0%	1%	0%	0%
<b>25</b>	7	0	1	1	9
Row%	78%	0%	11%	11%	100%
Col%	1%	0%	1%	1%	1%
<b>27</b>	0	1	0	1	2
Row%	0%	50%	0%	50%	100%
Col%	0%	0%	0%	1%	0%
<b>28</b>	1	0	0	0	1
Row%	100%	0%	0%	0%	100%
Col%	0%	0%	0%	0%	0%
<b>30</b>	1	1	2	0	4
Row%	25%	25%	50%	0%	100%
Col%	0%	0%	1%	0%	0%
<b>40</b>	0	1	1	0	2
Row%	0%	50%	50%	0%	100%
Col%	0%	0%	1%	0%	0%
<b>48</b>	0	1	0	0	1
Row%	0%	100%	0%	0%	100%
Col%	0%	0%	0%	0%	0%
<b>50</b>	1	1	0	0	2
Row%	50%	50%	0%	0%	100%
Col%	0%	0%	0%	0%	0%
<b>60</b>	1	0	0	0	1
Row%	100%	0%	0%	0%	100%
Col%	0%	0%	0%	0%	0%
<b>64</b>	0	1	0	0	1
Row%	0%	100%	0%	0%	100%
Col%	0%	0%	0%	0%	0%
<b>99</b>	13	5	3	1	22
Row%	59%	23%	14%	5%	100%
Col%	1%	2%	2%	1%	2%
<b>Refused</b>	1	0	0	0	1
Row%	100%	0%	0%	0%	100%
Col%	0%	0%	0%	0%	0%
<b>Don't know</b>	31	3	9	9	52
Row%	60%	6%	17%	17%	100%
Col%	3%	1%	5%	12%	4%
<b>Total</b>	920	263	187	77	1447
Row%	64%	18%	13%	5%	100%
Col%	100%	100%	100%	100%	100%

These data show no clear relationship between number of Lottery lines played per draw and level of risk for problem gambling. The average (mean) number of lines played for all gamblers, irrespective of level of risk for problem gambling, is 3.

We asked respondents who reported participation in gambling to indicate whether they were aware of the availability of counseling services for problem gambling. Below we compare responses with levels of risk for problem gambling.

## KNOWLEDGE OF GAMBLING COUNSELING SERVICES - GAMBLING SEVERITY

Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Awareness</b>					
<b>Yes</b>	392	76	65	24	557
Row%	70%	14%	12%	4%	100%
Col%	36%	25%	29%	25%	33%
<b>No</b>	436	182	118	63	799
Row%	55%	23%	15%	8%	100%
Col%	41%	59%	52%	65%	47%
<b>Don't know</b>	246	52	45	10	353
Row%	70%	15%	13%	3%	100%
Col%	23%	17%	20%	10%	21%
<b>Total</b>	1074	310	228	97	1709
Row%	63%	18%	13%	6%	100%
Col%	100%	100%	100%	100%	100%

Among gamblers, there is a clear inverse relationship between knowing about the existence of gambling counseling services and being at risk for problem gambling. Only 25% of respondents who are measured as at high risk for problem gambling are aware of the availability of counseling services. We speculate that subsequent analysis will suggest this to be explained by demographic variables associated with risk for problem gambling: the higher-risk subjects are less exposed to media, and less likely to gamble at legal establishments where notices about counseling services are posted and distributed.

We asked those respondents who reported participation in gambling to indicate the importance of the role gambling plays in their lives by comparison with other forms of entertainment. Below we compare the responses with levels of risk for problem gambling, and then with types of gambling settings respondents patronise.

## IMPORTANCE OF GAMBLING - GAMBLING SEVERITY

Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Importance</b>					
<b>Not at all important</b>	690	116	46	20	872
Row%	79%	13%	5%	2%	100%
Col%	64%	37%	20%	21%	51%
<b>Slightly important</b>	168	78	48	22	316
Row%	53%	25%	15%	7%	100%
Col%	16%	25%	21%	23%	18%
<b>Moderately important</b>	130	59	60	25	274
Row%	47%	22%	22%	9%	100%
Col%	12%	19%	26%	26%	16%
<b>Very important</b>	48	47	49	23	167
Row%	29%	28%	29%	14%	100%
Col%	4%	15%	21%	24%	10%
<b>Extremely important</b>	15	10	24	5	54
Row%	28%	19%	44%	9%	100%
Col%	1%	3%	11%	5%	3%
<b>Refused</b>	1	0	0	0	1
Row%	100%	0%	0%	0%	100%
Col%	0%	0%	0%	0%	0%
<b>Don't know</b>	22	0	1	2	25
Row%	88%	0%	4%	8%	100%
Col%	2%	0%	0%	2%	1%
<b>Total</b>	1074	310	228	97	1709
Row%	63%	18%	13%	6%	100%
Col%	100%	100%	100%	100%	100%

Among respondents who reported participation in gambling, there is a clear positive relationship between reported level of importance of gambling and risk for problem gambling.

IMPORTANCE OF GAMBLING - GAMBLING LOCATION									
Location Importance	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Not at all important</b>	125	36	161	454	15	20	42	19	872
Row%	14%	4%	18%	52%	2%	2%	5%	2%	100%
Col%	61%	49%	43%	53%	54%	35%	59%	41%	51%
<b>Slightly important</b>	36	14	71	162	7	11	8	7	316
Row%	11%	4%	22%	51%	2%	3%	3%	2%	100%
Col%	17%	19%	19%	19%	25%	19%	11%	15%	18%
<b>Moderately important</b>	32	15	64	126	2	14	11	10	274
Row%	12%	5%	23%	46%	1%	5%	4%	4%	100%
Col%	16%	21%	17%	15%	7%	25%	15%	22%	16%
<b>Very important</b>	11	4	56	74	2	9	6	5	167
Row%	7%	2%	34%	44%	1%	5%	4%	3%	100%
Col%	5%	5%	15%	9%	7%	16%	8%	11%	10%
<b>Extremely important</b>	2	4	18	20	2	2	3	3	54
Row%	4%	7%	33%	37%	4%	4%	6%	6%	100%
Col%	1%	5%	5%	2%	7%	4%	4%	7%	3%
<b>Refused</b>	0	0	0	0	0	0	0	1	1
Row%	0%	0%	0%	0%	0%	0%	0%	100%	100%
Col%	0%	0%	0%	0%	0%	0%	0%	2%	0%
<b>Don't know</b>	0	0	6	16	0	1	1	1	25
Row%	0%	0%	24%	64%	0%	4%	4%	4%	100%
Col%	0%	0%	2%	2%	0%	2%	1%	2%	1%
<b>Total</b>	206	73	376	852	28	57	71	46	1709
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Subjects who exclusively patronise informal gambling venues are much more likely to report that gambling is “very important” or “extremely important” to them than are gamblers who exclusively patronise casinos.

Respondents who reported participation in gambling were asked to indicate the level of importance to them of seven commonly cited motivations for gambling. Below we compare these responses first with level of risk for problem gambling, and then with types of gambling settings patronized by respondents.

REASONS FOR GAMBLING: ESCAPE FROM BOREDOM - GAMBLING SEVERITY					
Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Escape from boredom</b>					
<b>Not at all important</b>	634	131	69	22	856
Row%	74%	15%	8%	3%	100%
Col%	59%	42%	30%	23%	50%
<b>Slightly important</b>	176	61	48	9	294
Row%	60%	21%	16%	3%	100%
Col%	16%	20%	21%	9%	17%

## REASONS FOR GAMBLING: ESCAPE FROM BOREDOM - GAMBLING SEVERITY (continued)

Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Escape from boredom</b>					
<b>Moderately important</b>	120	52	50	17	239
Row%	50%	22%	21%	7%	100%
Col%	11%	17%	22%	18%	14%
<b>Very important</b>	87	46	39	39	211
Row%	41%	22%	18%	18%	100%
Col%	8%	15%	17%	40%	12%
<b>Extremely important</b>	43	16	19	10	88
Row%	49%	18%	22%	11%	100%
Col%	4%	5%	8%	10%	5%
<b>Don't know</b>	14	4	3	0	21
Row%	67%	19%	14%	0%	100%
Col%	1%	1%	1%	0%	1%
<b>Total</b>	1074	310	228	97	1709
Row%	63%	18%	13%	6%	100%
Col%	100%	100%	100%	100%	100%

Among respondents who report participation in gambling, there is a clear positive relationship between gambling to escape boredom and being at increased risk for problem gambling. 50% of subjects measured as being at high risk for problem gambling report that escape from boredom is a “very important” or “extremely important” motivation for their gambling, versus 12% of subjects measured as being at no risk for problem gambling.

## REASONS FOR GAMBLING: ESCAPE FROM BOREDOM - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Escape from boredom</b>									
<b>Not at all important</b>	101	32	146	481	16	28	30	22	856
Row%	12%	4%	17%	56%	2%	3%	4%	3%	100%
Col%	49%	44%	39%	56%	57%	49%	42%	48%	50%
<b>Slightly important</b>	42	11	67	144	4	8	12	6	294
Row%	14%	4%	23%	49%	1%	3%	4%	2%	100%
Col%	20%	15%	18%	17%	14%	14%	17%	13%	17%
<b>Moderately important</b>	33	10	62	105	5	8	9	7	239
Row%	14%	4%	26%	44%	2%	3%	4%	3%	100%
Col%	16%	14%	16%	12%	18%	14%	13%	15%	14%
<b>Very important</b>	18	13	62	86	1	11	12	8	211
Row%	9%	6%	29%	41%	0%	5%	6%	4%	100%
Col%	9%	18%	16%	10%	4%	19%	17%	17%	12%
<b>Extremely important</b>	12	6	35	21	1	2	8	3	88
Row%	14%	7%	40%	24%	1%	2%	9%	3%	100%
Col%	6%	8%	9%	2%	4%	4%	11%	7%	5%
<b>Don't know</b>	0	1	4	15	1	0	0	0	21
Row%	0%	5%	19%	71%	5%	0%	0%	0%	100%
Col%	0%	1%	1%	2%	4%	0%	0%	0%	1%
<b>Total</b>	206	73	376	852	28	57	71	46	1709
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

No evident relationship is observable in the data between gambling to escape from boredom and preference for a particular type of gambling setting.

REASONS FOR GAMBLING: EXCITEMENT AND ENJOYMENT OF GAMES - GAMBLING SEVERITY					
Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Excitement</b>					
<b>Not at all important</b>	517	81	43	14	655
Row%	79%	12%	7%	2%	100%
Col%	48%	26%	19%	14%	38%
<b>Slightly important</b>	204	72	38	14	328
Row%	62%	22%	12%	4%	100%
Col%	19%	23%	17%	14%	19%
<b>Moderately important</b>	169	67	59	31	326
Row%	52%	21%	18%	10%	100%
Col%	16%	22%	26%	32%	19%
<b>Very important</b>	139	62	54	22	277
Row%	50%	22%	19%	8%	100%
Col%	13%	20%	24%	23%	16%
<b>Extremely important</b>	34	24	31	15	104
Row%	33%	23%	30%	14%	100%
Col%	3%	8%	14%	15%	6%
<b>Don't know</b>	11	4	3	1	19
Row%	58%	21%	16%	5%	100%
Col%	1%	1%	1%	1%	1%
<b>Total</b>	1074	310	228	97	1709
Row%	63%	18%	13%	6%	100%
Col%	100%	100%	100%	100%	100%

Among respondents who reported participation in gambling, there is an association between gambling for excitement and enjoyment and being at increased risk for problem gambling. 38% of subjects measured as being at high risk for problem gambling report that excitement and enjoyment is a “very important” or “extremely important” motivation for their gambling, versus 16% of subjects measured as being at no risk for problem gambling.

REASONS FOR GAMBLING: EXCITEMENT AND ENJOYMENT OF GAMES - GAMBLING LOCATION									
Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Excitement</b>									
<b>Not at all important</b>	68	25	112	399	11	15	15	10	655
Row%	10%	4%	17%	61%	2%	2%	2%	2%	100%
Col%	33%	34%	30%	47%	39%	26%	21%	22%	38%
<b>Slightly important</b>	48	15	64	162	3	13	17	6	328
Row%	15%	5%	20%	49%	1%	4%	5%	2%	100%
Col%	23%	21%	17%	19%	11%	23%	24%	13%	19%

## REASONS FOR GAMBLING: EXCITEMENT AND ENJOYMENT OF GAMES - GAMBLING LOCATION (continued)

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Excitement</b>									
<b>Moderately important</b>	33	10	62	105	5	8	9	7	239
Row%	14%	4%	26%	44%	2%	3%	4%	3%	100%
Col%	16%	14%	16%	12%	18%	14%	13%	15%	14%
<b>Very important</b>	18	13	62	86	1	11	12	8	211
Row%	9%	6%	29%	41%	0%	5%	6%	4%	100%
Col%	9%	18%	16%	10%	4%	19%	17%	17%	12%
<b>Extremely important</b>	12	6	35	21	1	2	8	3	88
Row%	14%	7%	40%	24%	1%	2%	9%	3%	100%
Col%	6%	8%	9%	2%	4%	4%	11%	7%	5%
<b>Don't know</b>	0	1	4	15	1	0	0	0	21
Row%	0%	5%	19%	71%	5%	0%	0%	0%	100%
Col%	0%	1%	1%	2%	4%	0%	0%	0%	1%
<b>Total</b>	206	73	376	852	28	57	71	46	1709
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Gamblers who patronise informal venues are more likely to rank excitement and enjoyment of games as an “extremely important” motivation for gambling than respondents who patronise legal casinos.

## REASONS FOR GAMBLING: HOPE OF SOLVING FINANCIAL PROBLEMS - GAMBLING SEVERITY

Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Solving financial problems</b>					
<b>Not at all important</b>	551	95	39	11	696
Row%	79%	14%	6%	2%	100%
Col%	51%	31%	17%	11%	41%
<b>Slightly important</b>	138	42	25	23	228
Row%	61%	18%	11%	10%	100%
Col%	13%	14%	11%	24%	13%
<b>Moderately important</b>	145	64	47	14	270
Row%	54%	24%	17%	5%	100%
Col%	14%	21%	21%	14%	16%
<b>Very important</b>	139	63	75	29	306
Row%	45%	21%	25%	9%	100%
Col%	13%	20%	33%	30%	18%
<b>Extremely important</b>	89	43	40	19	191
Row%	47%	23%	21%	10%	100%
Col%	8%	14%	18%	20%	11%
<b>Don't know</b>	12	3	2	1	18
Row%	67%	17%	11%	6%	100%
Col%	1%	1%	1%	1%	1%
<b>Total</b>	1074	310	228	97	1709
Row%	63%	18%	13%	6%	100%
Col%	100%	100%	100%	100%	100%

Among respondents who reported participation in gambling, there is an association between gambling in hope of solving financial problems and being at increased risk for problem gambling. 50% of subjects measured as being at high risk for problem gambling report that hoping to solve financial problems is a “very important” or “extremely important” motivation for their gambling, versus 21% of subjects measured as being at no risk for problem gambling. We find the last number to be surprisingly high.

REASONS FOR GAMBLING: HOPE OF SOLVING FINANCIAL PROBLEMS - GAMBLING LOCATION									
Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Hope of solving financial problems</b>									
<b>Not at all important</b>	112	20	125	347	17	18	36	21	696
Row%	16%	3%	18%	50%	2%	3%	5%	3%	100%
Col%	54%	27%	33%	41%	61%	32%	51%	46%	41%
<b>Slightly important</b>	22	13	42	123	2	10	8	8	228
Row%	10%	6%	18%	54%	1%	4%	4%	4%	100%
Col%	11%	18%	11%	14%	7%	18%	11%	17%	13%
<b>Moderately important</b>	33	9	70	133	2	11	8	4	270
Row%	12%	3%	26%	49%	1%	4%	3%	1%	100%
Col%	16%	12%	19%	16%	7%	19%	11%	9%	16%
<b>Very important</b>	25	19	77	148	5	12	11	9	306
Row%	8%	6%	25%	48%	2%	4%	4%	3%	100%
Col%	12%	26%	20%	17%	18%	21%	15%	20%	18%
<b>Extremely important</b>	11	12	55	93	2	6	8	4	191
Row%	6%	6%	29%	49%	1%	3%	4%	2%	100%
Col%	5%	16%	15%	11%	7%	11%	11%	9%	11%
<b>Don't know</b>	3	0	7	8	0	0	0	0	18
Row%	17%	0%	39%	44%	0%	0%	0%	0%	100%
Col%	1%	0%	2%	1%	0%	0%	0%	0%	1%
<b>Total</b>	206	73	376	852	28	57	71	46	1709
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Gambling in hopes of solving financial problems is related to gambling exclusively in informal venues, by comparison with gambling exclusively in legal casinos. We speculate that this is due to demographic variables associated with preference for informal venues, specifically, greater frequency of personal financial crises and reduced access to credit.

REASONS FOR GAMBLING: SOCIAL INTERACTION WITH PLAYERS AND STAFF - GAMBLING SEVERITY					
Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Social Interaction</b>					
<b>Not at all important</b>	615	122	58	12	807
Row%	76%	15%	7%	1%	100%
Col%	57%	39%	25%	12%	47%
<b>Slightly important</b>	140	54	47	17	258
Row%	54%	21%	18%	7%	100%
Col%	13%	17%	21%	18%	15%
<b>Moderately important</b>	160	59	47	32	298
Row%	54%	20%	16%	11%	100%
Col%	15%	19%	21%	33%	17%



## REASONS FOR GAMBLING: SOCIAL INTERACTION WITH PLAYERS AND STAFF - GAMBLING SEVERITY (continued)

Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Social Interaction</b>					
<b>Very important</b>	109	49	56	22	236
Row%	46%	21%	24%	9%	100%
Col%	10%	16%	25%	23%	14%
<b>Extremely important</b>	31	16	17	13	77
Row%	40%	21%	22%	17%	100%
Col%	3%	5%	7%	13%	5%
<b>Don't know</b>	19	10	3	1	33
Row%	58%	30%	9%	3%	100%
Col%	2%	3%	1%	1%	2%
<b>Total</b>	1074	310	228	97	1709
Row%	63%	18%	13%	6%	100%
Col%	100%	100%	100%	100%	100%

Among respondents who reported participation in gambling, there is a clear relationship between gambling for social interaction with players and staff and being at increased risk for problem gambling. 36% of subjects measured as being at high risk for problem gambling report that social interaction is a “very important” or “extremely important” motivation for their gambling, versus 13% of subjects measured as being at no risk for problem gambling.

## REASONS FOR GAMBLING: SOCIAL INTERACTIONS WITH PLAYERS AND STAFF - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Social Interaction</b>									
<b>Not at all important</b>	103	28	126	478	11	21	26	14	807
Row%	13%	3%	16%	59%	1%	3%	3%	2%	100%
Col%	50%	38%	34%	56%	39%	37%	37%	30%	47%
<b>Slightly important</b>	27	6	65	124	10	8	12	6	258
Row%	10%	2%	25%	48%	4%	3%	5%	2%	100%
Col%	13%	8%	17%	15%	36%	14%	17%	13%	15%
<b>Moderately important</b>	43	14	85	119	1	14	10	12	298
Row%	14%	5%	29%	40%	0%	5%	3%	4%	100%
Col%	21%	19%	23%	14%	4%	25%	14%	26%	17%
<b>Very important</b>	31	13	65	89	5	12	13	8	236
Row%	13%	6%	28%	38%	2%	5%	6%	3%	100%
Col%	15%	18%	17%	10%	18%	21%	18%	17%	14%
<b>Extremely important</b>	1	9	26	23	1	2	10	5	77
Row%	1%	12%	34%	30%	1%	3%	13%	6%	100%
Col%	0%	12%	7%	3%	4%	4%	14%	11%	5%
<b>Don't know</b>	1	3	9	19	0	0	0	1	33
Row%	3%	9%	27%	58%	0%	0%	0%	3%	100%
Col%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>Total</b>	206	73	376	852	28	57	71	46	1709
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

There is a clear relationship between exclusive patronage of informal venues, by contrast with exclusive patronage of legal casinos, and gambling for enjoyment of social interactions with players and staff.

## REASONS FOR GAMBLING: CHANCE TO DREAM ABOUT WINNING A LARGE SUM OF MONEY - GAMBLING SEVERITY

Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Dream about winning large sums</b>					
<b>Not at all important</b>	310	47	19	6	382
Row%	81%	12%	5%	2%	100%
Col%	29%	15%	8%	6%	22%
<b>Slightly important</b>	131	33	18	20	202
Row%	65%	16%	9%	10%	100%
Col%	12%	11%	8%	21%	12%
<b>Moderately important</b>	210	51	44	16	321
Row%	65%	16%	14%	5%	100%
Col%	20%	16%	19%	16%	19%
<b>Very important</b>	218	80	78	24	400
Row%	55%	20%	20%	6%	100%
Col%	20%	26%	34%	25%	23%
<b>Extremely important</b>	195	97	69	31	392
Row%	50%	25%	18%	8%	100%
Col%	18%	31%	30%	32%	23%
<b>Don't know</b>	10	2	0	0	12
Row%	83%	17%	0%	0%	100%
Col%	1%	1%	0%	0%	1%
<b>Total</b>	1074	310	228	97	1709
Row%	63%	18%	13%	6%	100%
Col%	100%	100%	100%	100%	100%

Among respondents who reported participation in gambling, there is an association between gambling in order to dream about winning a large sum of money and being at risk for problem gambling. But this is reported as an at least moderately important motivation by a majority of gamblers at all levels of risk for problem gambling.

## REASONS FOR GAMBLING: CHANCE TO DREAM ABOUT WINNING A LARGE SUM OF MONEY - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Dream about winning large sums</b>									
<b>Not at all important</b>	57	13	80	189	5	11	18	9	382
Row%	15%	3%	21%	49%	1%	3%	5%	2%	100%
Col%	28%	18%	21%	22%	18%	19%	25%	20%	22%
<b>Slightly important</b>	27	8	46	93	5	7	12	4	202
Row%	13%	4%	23%	46%	2%	3%	6%	2%	100%
Col%	13%	11%	12%	11%	18%	12%	17%	9%	12%
<b>Moderately important</b>	45	8	60	177	6	11	5	9	321
Row%	14%	2%	19%	55%	2%	3%	2%	3%	100%
Col%	22%	11%	16%	21%	21%	19%	7%	20%	19%
<b>Very important</b>	42	19	90	202	6	13	16	12	400
Row%	11%	5%	23%	51%	2%	3%	4%	3%	100%
Col%	20%	26%	24%	24%	21%	23%	23%	26%	23%
<b>Extremely important</b>	35	25	95	184	6	15	20	12	392
Row%	9%	6%	24%	47%	2%	4%	5%	3%	100%
Col%	17%	34%	25%	22%	21%	26%	28%	26%	23%

## REASONS FOR GAMBLING: CHANCE TO DREAM ABOUT WINNING A LARGE SUM OF MONEY - GAMBLING LOCATION (continued)

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Dream about winning large sums</b>									
<b>Don't know</b>	0	0	5	7	0	0	0	0	12
Row%	0%	0%	42%	58%	0%	0%	0%	0%	100%
Col%	0%	0%	1%	1%	0%	0%	0%	0%	1%
<b>Total</b>	206	73	376	852	28	57	71	46	1709
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

There is a clear relationship between exclusive patronage of informal venues, by contrast with exclusive patronage of legal casinos, and gambling for the chance to enjoy dreaming about winning a large sum of money.

## REASONS FOR GAMBLING: THE GLAMOROUS ATMOSPHERE - GAMBLING SEVERITY

Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Glamorous Atmosphere</b>					
<b>Not at all important</b>	625	123	63	17	828
Row%	75%	15%	8%	2%	100%
Col%	58%	40%	28%	18%	48%
<b>Slightly important</b>	132	56	37	16	241
Row%	55%	23%	15%	7%	100%
Col%	12%	18%	16%	16%	14%
<b>Moderately important</b>	161	50	49	25	285
Row%	56%	18%	17%	9%	100%
Col%	15%	16%	21%	26%	17%
<b>Very important</b>	102	56	50	22	230
Row%	44%	24%	22%	10%	100%
Col%	9%	18%	22%	23%	13%
<b>Extremely important</b>	31	18	27	14	90
Row%	34%	20%	30%	16%	100%
Col%	3%	6%	12%	14%	5%
<b>Don't know</b>	23	7	2	3	35
Row%	66%	20%	6%	9%	100%
Col%	2%	2%	1%	3%	2%
<b>Total</b>	1074	310	228	97	1709
Row%	63%	18%	13%	6%	100%
Col%	100%	100%	100%	100%	100%

Among respondents who reported participation in gambling, there is a clear relationship between gambling to enjoy a glamorous atmosphere and being at risk for problem gambling. 37% of subjects measured as at high risk for problem gambling report that enjoyment of a glamorous atmosphere is a "very important" or "extremely important" motivation for their gambling, versus 12% of subjects measured as at no risk for problem gambling. This is notwithstanding the strong association between patronising informal venues exclusively and being at risk for problem gambling.

## REASONS FOR GAMBLING: THE GLAMOROUS ATMOSPHERE - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Glamorous Atmosphere</b>									
<b>Not at all important</b>	79	28	162	488	13	19	25	14	828
Row%	10%	3%	20%	59%	2%	2%	3%	2%	100%
Col%	38%	38%	43%	57%	46%	33%	35%	30%	48%
<b>Slightly important</b>	43	11	58	102	7	6	12	2	241
Row%	18%	5%	24%	42%	3%	2%	5%	1%	100%
Col%	21%	15%	15%	12%	25%	11%	17%	4%	14%
<b>Moderately important</b>	41	16	58	124	5	16	12	13	285
Row%	14%	6%	20%	44%	2%	6%	4%	5%	100%
Col%	20%	22%	15%	15%	18%	28%	17%	28%	17%
<b>Very important</b>	34	11	59	88	1	12	14	11	230
Row%	15%	5%	26%	38%	0%	5%	6%	5%	100%
Col%	17%	15%	16%	10%	4%	21%	20%	24%	13%
<b>Extremely important</b>	4	7	35	26	2	2	8	6	90
Row%	4%	8%	39%	29%	2%	2%	9%	7%	100%
Col%	2%	10%	9%	3%	7%	4%	11%	13%	5%
<b>Don't know</b>	5	0	4	24	0	2	0	0	35
Row%	14%	0%	11%	69%	0%	6%	0%	0%	100%
Col%	2%	0%	1%	3%	0%	4%	0%	0%	2%
<b>Total</b>	206	73	376	852	28	57	71	46	1709
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

No clear relationship is observable in the data between gambling to enjoy a glamorous atmosphere and preference for a particular type of gambling venue. It may be thought intuitively surprising that somewhat more patrons of informal (25%) than of formal (19%) gambling venues report that a glamorous atmosphere is “very important” or “extremely important” in their gambling motivations. Standards for subjective glamour among South African gamblers may differ from the standards likely to be entertained by the media or by regulators.

## REASONS FOR GAMBLING: RELAXATION - GAMBLING SEVERITY

Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Relaxation</b>					
<b>Not at all important</b>	537	98	40	14	689
Row%	78%	14%	6%	2%	100%
Col%	50%	32%	18%	14%	40%
<b>Slightly important</b>	155	57	47	18	277
Row%	56%	21%	17%	6%	100%
Col%	14%	18%	21%	19%	16%
<b>Moderately important</b>	156	65	51	27	299
Row%	52%	22%	17%	9%	100%
Col%	15%	21%	22%	28%	17%
<b>Very important</b>	146	54	52	28	280
Row%	52%	19%	19%	10%	100%
Col%	14%	17%	23%	29%	16%
<b>Extremely important</b>	68	35	37	10	150
Row%	45%	23%	25%	7%	100%
Col%	6%	11%	16%	10%	9%

## REASONS FOR GAMBLING: RELAXATION - GAMBLING SEVERITY (continued)

Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Relaxation</b>					
<b>Don't know</b>	23	7	2	3	35
Row%	66%	20%	6%	9%	100%
Col%	2%	2%	1%	3%	2%
<b>Total</b>	1074	310	228	97	1709
Row%	63%	18%	13%	6%	100%
Col%	100%	100%	100%	100%	100%

Among respondents who reported participation in gambling, there appears to be an association between gambling for relaxation and being at risk for problem gambling. 39% of subjects measured as at high risk for problem gambling report that the prospect of relaxation is a “very important” or “extremely important” motivation for their gambling, versus 20% of subjects measured as at no risk for problem gambling.

## REASONS FOR GAMBLING: RELAXATION - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Relaxation</b>									
<b>Not at all important</b>	50	25	115	451	7	13	17	11	689
Row%	7%	4%	17%	65%	1%	2%	2%	2%	100%
Col%	24%	34%	31%	53%	25%	23%	24%	24%	40%
<b>Slightly important</b>	47	9	74	117	8	8	10	4	277
Row%	17%	3%	27%	42%	3%	3%	4%	1%	100%
Col%	23%	12%	20%	14%	29%	14%	14%	9%	16%
<b>Moderately important</b>	37	12	70	140	2	14	12	12	299
Row%	12%	4%	23%	47%	1%	5%	4%	4%	100%
Col%	18%	16%	19%	16%	7%	25%	17%	26%	17%
<b>Very important</b>	51	17	68	90	8	17	20	9	280
Row%	18%	6%	24%	32%	3%	6%	7%	3%	100%
Col%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>Extremely important</b>	21	10	46	44	3	5	11	10	150
Row%	14%	7%	31%	29%	2%	3%	7%	7%	100%
Col%	10%	14%	12%	5%	11%	9%	15%	22%	9%
<b>Don't know</b>	0	0	3	10	0	0	1	0	14
Row%	0%	0%	21%	71%	0%	0%	7%	0%	100%
Col%	0%	0%	1%	1%	0%	0%	1%	0%	1%
<b>Total</b>	206	73	376	852	28	57	71	46	1709
Row%	12%	4%	22%	50%	2%	3%	4%	3%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

No evident relationship is observable in the data between gambling for relaxation and preference for a particular type of gambling venue.

Respondents who reported participation in gambling were asked which of two statements best describes them:

(1) When I gamble, I decide in advance what is the most money I'm willing to let myself lose before I stop.

(2) I don't really think about when to stop, I just stop when I get tired of the game.

Below we compare the responses with levels of risk for problem gambling.

PERSONAL LIMITS - GAMBLING SEVERITY					
Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Limit</b>					
<b>Personal limit</b>	906	225	148	44	1323
Row%	68%	17%	11%	3%	100%
Col%	84%	73%	65%	45%	77%
<b>No limit</b>	161	84	80	53	378
Row%	43%	22%	21%	14%	100%
Col%	15%	27%	35%	55%	22%
<b>Not applicable</b>	7	1	0	0	8
Row%	88%	13%	0%	0%	100%
Col%	1%	0%	0%	0%	0%
<b>Total</b>	1074	310	228	97	1709
Row%	63%	18%	13%	6%	100%
Col%	100%	100%	100%	100%	100%

Among respondents who reported participation in gambling, there is a clear inverse relationship between setting personal limits on gambling and risk for problem gambling. 84% of gamblers measured as being at no risk for problem gambling report setting personal limits, by contrast with 45% of gamblers measured as being at high risk for problem gambling.

Respondents who chose (1) in response to the previous question were asked about the regularity with which they stick to the personal limits they set. We compared the responses with levels of risk for problem gambling.

STICK TO LIMIT? - GAMBLING SEVERITY					
Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Stick to limit?</b>					
<b>Never</b>	30	9	7	5	51
Row%	59%	18%	14%	10%	100%
Col%	3%	4%	5%	11%	4%
<b>Some of the time</b>	95	54	53	15	217
Row%	44%	25%	24%	7%	100%
Col%	10%	24%	36%	34%	16%
<b>Most of the time</b>	135	64	39	19	257
Row%	53%	25%	15%	7%	100%
Col%	15%	28%	26%	43%	19%
<b>Almost always</b>	627	97	48	5	777
Row%	81%	12%	6%	1%	100%
Col%	69%	43%	32%	11%	59%
<b>Refused</b>	1	0	0	0	1
Row%	100%	0%	0%	0%	100%
Col%	0%	0%	0%	0%	0%
<b>Don't know</b>	18	1	1	0	20
Row%	90%	5%	5%	0%	100%
Col%	2%	0%	1%	0%	2%
<b>Total</b>	906	225	148	44	1323
Row%	68%	17%	11%	3%	100%
Col%	100%	100%	100%	100%	100%

Whereas 69% of subjects measured as at no risk for problem gambling report “almost always” sticking to their limits, this is reported by only 11% of subjects measured as at high risk for problem gambling. However, an absolute majority (54%) of subjects measured as at risk for problem gambling report sticking to their limits “most of the time” or “almost always”.

It is often suggested that financially reckless gambling – and perhaps problem gambling – is related to false or superstitious beliefs about causal links between independent events. We therefore asked respondents who reported participation in gambling to choose between three possible sets of expectations they would have concerning changes in probabilities of winning or losing that would follow a long series of losses. Below we compare the responses with levels of risk for problem gambling.

<b>GAMBLER'S FALLACY - GAMBLING SEVERITY</b>					
<b>Categories</b>	<b>no risk</b>	<b>low risk</b>	<b>moderate risk</b>	<b>problem gambling</b>	<b>Total</b>
<b>“After a long series of losses...</b>					
<b>... the likelihood of winning or losing remains the same”</b>					
	396	118	65	30	609
Row%	65%	19%	11%	5%	100%
Col%	37%	38%	29%	31%	36%
<b>...the likelihood of losing increases.”</b>					
	157	55	50	34	296
Row%	53%	19%	17%	11%	100%
Col%	15%	18%	22%	35%	17%
<b>...the likelihood of winning increases.”</b>					
	210	97	100	31	438
Row%	48%	22%	23%	7%	100%
Col%	20%	31%	44%	32%	26%
<b>Don't know</b>					
	311	40	13	2	366
Row%	85%	11%	4%	1%	100%
Col%	29%	13%	6%	2%	21%
<b>Total</b>					
	1074	310	228	97	1709
Row%	63%	18%	13%	6%	100%
Col%	100%	100%	100%	100%	100%

Among gamblers, there is an association between believing in the classic gambler's fallacy and risk for problem gambling, although only a minority of gamblers at all risk levels is aware that events are independent. There is a stronger relationship between believing in a 'reverse' gambler's fallacy – believing that losses predict more losses – and risk for problem gambling. Among respondents at high risk for problem gambling, slightly more endorse the reverse gamblers fallacy than endorse the classic gamblers fallacy. The opposite bias is observed in all other categories of risk.

We asked respondents who reported participating in gambling about their extent of agreement with the statement “I have a method of gambling, which makes winning in the long run more likely.” Below we compare the responses with levels of risk for problem gambling.

## “I HAVE A METHOD” - GAMBLING SEVERITY

Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>“I have a method of gambling, which makes winning in the long run more likely.”</b>					
<b>Strongly disagree</b>	392	60	40	6	498
Row%	79%	12%	8%	1%	100%
Col%	36%	19%	18%	6%	29%
<b>Disagree</b>	244	54	31	11	340
Row%	72%	16%	9%	3%	100%
Col%	23%	17%	14%	11%	20%
<b>Neither agree nor disagree</b>	190	65	57	19	331
Row%	57%	20%	17%	6%	100%
Col%	18%	21%	25%	20%	19%
<b>Agree</b>	155	89	54	48	346
Row%	45%	26%	16%	14%	100%
Col%	14%	29%	24%	49%	20%
<b>Strongly agree</b>	49	31	42	11	133
Row%	37%	23%	32%	8%	100%
Col%	5%	10%	18%	11%	8%
<b>Not applicable</b>	0	1	0	0	1
Row%	0%	100%	0%	0%	100%
Col%	0%	0%	0%	0%	0%
<b>Refused</b>	1	0	0	0	1
Row%	100%	0%	0%	0%	100%
Col%	0%	0%	0%	0%	0%
<b>Don't know</b>	43	10	4	2	59
Row%	73%	17%	7%	3%	100%
Col%	4%	3%	2%	2%	3%
<b>Total</b>	1074	310	228	97	1709
Row%	63%	18%	13%	6%	100%
Col%	100%	100%	100%	100%	100%

Among respondents who reported participation in gambling, there is a clear relationship between belief in knowledge of a method that increases odds of winning and risk for problem gambling. 60% of subjects measured as being at high risk for problem gambling “agree” or “strongly agree” that they have such a method. The corresponding figure for subjects measured as being at no risk for problem gambling is 19%.

We asked respondents who reported participation in gambling about their extent of agreement with the statement “When I win at gambling, I put the winnings back into gambling”. Below we compare the responses with levels of risk for problem gambling.



## “PUT WINNINGS BACK INTO GAMBLING” - GAMBLING SEVERITY

Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>“Put winnings back”</b>					
<b>Strongly disagree</b>	432	74	39	7	552
Row%	78%	13%	7%	1%	100%
Col%	40%	24%	17%	7%	32%
<b>Disagree</b>	342	90	45	22	499
Row%	69%	18%	9%	4%	100%
Col%	32%	29%	20%	23%	29%
<b>Neither agree nor disagree</b>	135	78	72	32	317
Row%	43%	25%	23%	10%	100%
Col%	13%	25%	32%	33%	19%
<b>Agree</b>	103	50	55	24	232
Row%	44%	22%	24%	10%	100%
Col%	10%	16%	24%	25%	14%
<b>Strongly agree</b>	28	12	14	11	65
Row%	43%	18%	22%	17%	100%
Col%	3%	4%	6%	11%	4%
<b>Not applicable</b>	0	1	0	0	1
Row%	0%	100%	0%	0%	100%
Col%	0%	0%	0%	0%	0%
<b>Refused</b>	1	0	0	0	1
Row%	100%	0%	0%	0%	100%
Col%	0%	0%	0%	0%	0%
<b>Don't know</b>	33	5	3	1	42
Row%	79%	12%	7%	2%	100%
Col%	3%	2%	1%	1%	2%
<b>Total</b>	1074	310	228	97	1709
Row%	63%	18%	13%	6%	100%
Col%	100%	100%	100%	100%	100%

Among respondents who reported participation in gambling, there is a clear relationship between tendency to put winnings back into gambling and risk for problem gambling. 36% of subjects measured as at high risk for problem gambling report this tendency (“agree” or “strongly agree”), versus 13% of subjects measured as at no risk for problem gambling.

An important issue in investigating the etiology of problem gambling is the extent to which the behaviour is contagious within familial and friendship networks. We therefore asked respondents who reported participation in gambling about their extent of agreement with the statements “My family gambles” and “My friends gamble”. Below we compare the responses with levels of risk for problem gambling.

## “FAMILY GAMBLER” - GAMBLING SEVERITY

Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>“My family gambles.”</b>					
<b>Strongly disagree</b>	482	115	63	23	683
Row%	71%	17%	9%	3%	100%
Col%	45%	37%	28%	24%	40%
<b>Disagree</b>	243	80	48	33	404
Row%	60%	20%	12%	8%	100%
Col%	23%	26%	21%	34%	24%
<b>Neither agree nor disagree</b>	136	19	36	13	204
Row%	67%	9%	18%	6%	100%
Col%	13%	6%	16%	13%	12%
<b>Agree</b>	155	68	56	21	300
Row%	52%	23%	19%	7%	100%
Col%	14%	22%	25%	22%	18%
<b>Strongly agree</b>	28	15	19	5	67
Row%	42%	22%	28%	7%	100%
Col%	3%	5%	8%	5%	4%
<b>Refused</b>	1	0	0	0	1
Row%	100%	0%	0%	0%	100%
Col%	0%	0%	0%	0%	0%
<b>Don't know</b>	29	13	6	2	50
Row%	58%	26%	12%	4%	100%
Col%	3%	4%	3%	2%	3%
<b>Total</b>	1074	310	228	97	1709
Row%	63%	18%	13%	6%	100%
Col%	100%	100%	100%	100%	100%

The data are compatible with some association between the probability that a respondent's family gambles and risk for problem gambling.

## “FRIENDS GAMBLE” - GAMBLING SEVERITY

Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>“My friends gamble.”</b>					
<b>Strongly disagree</b>	258	43	16	9	326
Row%	79%	13%	5%	3%	100%
Col%	24%	14%	7%	9%	19%
<b>Disagree</b>	150	32	28	14	224
Row%	67%	14%	13%	6%	100%
Col%	14%	10%	12%	14%	13%
<b>Neither agree nor disagree</b>	184	59	38	22	303
Row%	61%	19%	13%	7%	100%
Col%	17%	19%	17%	23%	18%
<b>Agree</b>	340	124	80	24	568
Row%	60%	22%	14%	4%	100%
Col%	32%	40%	35%	25%	33%
<b>Strongly agree</b>	79	40	57	25	201
Row%	39%	20%	28%	12%	100%
Col%	7%	13%	25%	26%	12%

### “FRIENDS GAMBLE” - GAMBLING SEVERITY (continued)

Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>“My friends gamble.”</b>					
<b>Refused</b>	1	0	0	0	1
Row%	100%	0%	0%	0%	100%
Col%	0%	0%	0%	0%	0%
<b>Don't know</b>	62	12	9	3	86
Row%	72%	14%	10%	3%	100%
Col%	6%	4%	4%	3%	5%
<b>Total</b>	1074	310	228	97	1709
Row%	63%	18%	13%	6%	100%
Col%	100%	100%	100%	100%	100%

There is no clear *general* relationship between the probability that a respondent’s friends gamble and risk for problem gambling. However, whereas 26% of respondents measured as being at high risk for problem gambling “strongly agree” that their friends gamble, the corresponding proportion of respondents (among those who reported participation in gambling) measured as being at no risk for problem gambling is 7%.

It is possible that a person is more likely to gamble problematically to the extent that they believe that gambling is normative – that is, that gambling is statistically normal behaviour. (In our sample this belief would be true, although 43% reported never gambling.) We therefore asked those respondents who reported participation in gambling about the extent of their agreement with the statement “Most people gamble”. Below we compare responses to levels of risk for problem gambling.

### “MOST PEOPLE GAMBLE” - GAMBLING SEVERITY

Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>“Most people gamble.”</b>					
<b>Strongly disagree</b>	84	9	5	5	103
Row%	82%	9%	5%	5%	100%
Col%	8%	3%	2%	5%	6%
<b>Disagree</b>	85	17	11	10	123
Row%	69%	14%	9%	8%	100%
Col%	8%	5%	5%	10%	7%
<b>Neither agree nor disagree</b>	154	42	37	22	255
Row%	60%	16%	15%	9%	100%
Col%	14%	14%	16%	23%	15%
<b>Agree</b>	396	119	72	28	615
Row%	64%	19%	12%	5%	100%
Col%	37%	38%	32%	29%	36%
<b>Strongly agree</b>	282	115	99	30	526
Row%	54%	22%	19%	6%	100%
Col%	26%	37%	43%	31%	31%
<b>Refused</b>	1	0	0	0	1
Row%	100%	0%	0%	0%	100%
Col%	0%	0%	0%	0%	0%
<b>Don't know</b>	72	8	4	2	86
Row%	84%	9%	5%	2%	100%
Col%	7%	3%	2%	2%	5%
<b>Total</b>	1074	310	228	97	1709
Row%	63%	18%	13%	6%	100%
Col%	100%	100%	100%	100%	100%

The data show no clear relationship between the probability that a respondent who reports participation in gambling thinks that most people gamble and risk for problem gambling. Thus the data neither support nor contradict the hypothesis that believing that gambling is normal promotes development of gambling problems.

It has been suggested by some leading psychologists who study problem and pathological gamblers that such people often fit the profile of the 'lonely addict'. What is meant by this is that gambling is treated by the problem gambler as a substitute for interaction with family members and friends. Running counter to this pattern, however, might be one in which problem gamblers participate in gambling as family or social activity. To investigate this, we asked respondents who reported participation in gambling to report the extent of their gambling activity that is engaged in with friends or family. Below we compare the responses with levels of risk for problem gambling.

<b>“GAMBLE WITH FRIENDS OR FAMILY” - GAMBLING SEVERITY</b>					
<b>Categories</b>	<b>no risk</b>	<b>low risk</b>	<b>moderate risk</b>	<b>problem gambling</b>	<b>Total</b>
<b>Would you say that when you gamble, you gamble with friends or family?</b>					
<b>Never</b>	567	102	49	17	735
Row%	77%	14%	7%	2%	100%
Col%	53%	33%	21%	18%	43%
<b>Some of the time</b>	287	121	99	41	548
Row%	52%	22%	18%	7%	100%
Col%	27%	39%	43%	42%	32%
<b>Most of the time</b>	116	58	49	23	246
Row%	47%	24%	20%	9%	100%
Col%	11%	19%	21%	24%	14%
<b>Almost always</b>	91	28	29	16	164
Row%	55%	17%	18%	10%	100%
Col%	8%	9%	13%	16%	10%
<b>Don't know</b>	13	1	2	0	16
Row%	81%	6%	13%	0%	100%
Col%	1%	0%	1%	0%	1%
<b>Total</b>	1074	310	228	97	1709
Row%	63%	18%	13%	6%	100%
Col%	100%	100%	100%	100%	100%

There is a clear relationship positive between tending to gamble with friends or family and risk for problem gambling. These data thus do not support the hypothesis that problem gambling emerges as gambling becomes a substitute for social and family interaction.

The next table compares the results that have so far featured as the row variables on all previous tables: risk for problem gambling and type of gambling settings patronized. Are some gambling settings more strongly associated with gambling problems than others?

CPGI CATEGORY - GAMBLING LOCATION									
Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>CPGI category</b>									
<b>No gambling</b>	0	0	0	1291	0	0	0	0	1291
Row%	0%	0%	0%	100%	0%	0%	0%	0%	100%
Col%	0%	0%	0%	60%	0%	0%	0%	0%	43%
<b>No risk</b>	144	52	156	618	15	29	37	23	1074
Row%	13%	5%	15%	58%	1%	3%	3%	2%	100%
Col%	70%	71%	41%	29%	54%	51%	52%	50%	36%
<b>Low risk</b>	31	11	84	136	6	10	20	12	310
Row%	10%	4%	27%	44%	2%	3%	6%	4%	100%
Col%	15%	15%	22%	6%	21%	18%	28%	26%	10%
<b>Moderate risk</b>	25	10	90	76	3	12	8	4	228
Row%	11%	4%	39%	33%	1%	5%	4%	2%	100%
Col%	12%	14%	24%	4%	11%	21%	11%	9%	8%
<b>Problem gambling</b>	6	0	46	22	4	6	6	7	97
Row%	6%	0%	47%	23%	4%	6%	6%	7%	100%
Col%	3%	0%	12%	1%	14%	11%	8%	15%	3%
<b>Total</b>	206	73	376	2143	28	57	71	46	3000
Row%	7%	2%	13%	71%	1%	2%	2%	2%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

There is a clear relationship between exclusively patronising informal venues, by comparison with exclusively patronising legal casinos, and risk for problem gambling. This confirms what previous comparisons have led us to expect. The relationship calls for deeper analysis. Therefore, it features as the object of our second multivariate regression analysis at the conclusion of the present section.

The next series of tables compare risk for problem gambling with responses to questions that were intended to be asked only of respondents measured as being at moderate or high risk for problem gambling. The object is to reveal some potentially distinguishing features between these groups. The tables indicate a minor error in surveying: a few respondents measured as being at no risk and low risk for problem gambling were mistakenly asked the questions. We will not comment on the meaningless results of the error, but for completeness we show them.

EVER TRIED TO STOP? - GAMBLING SEVERITY					
Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Have you ever tried to stop or cut down on your gambling in the past?</b>					
<b>yes</b>	3	5	61	55	124
Row%	2%	4%	49%	44%	100%
Col%	25%	63%	35%	57%	43%
<b>no</b>	9	3	112	42	166
Row%	5%	2%	67%	25%	100%
Col%	75%	38%	65%	43%	57%
<b>Total</b>	12	8	173	97	290
Row%	4%	3%	60%	33%	100%
Col%	100%	100%	100%	100%	100%

35% of respondents measured as being at moderate risk for problem gambling, and 57% of respondents measured as being at high risk for problem gambling, have at some time attempted to stop gambling. These respondents were then asked whether their attempts were successful. The results are shown below.

WHERE YOU SUCCESSFUL? - GAMBLING SEVERITY					
Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Where you successful?</b>					
<b>yes</b>	3	4	36	30	73
Row%	4%	5%	49%	41%	100%
Col%	100%	80%	59%	55%	59%
<b>no</b>	0	1	25	25	51
Row%	0%	2%	49%	49%	100%
Col%	0%	20%	41%	45%	41%
<b>Total</b>	3	5	61	55	124
Row%	2%	4%	49%	44%	100%
Col%	100%	100%	100%	100%	100%

59% of attempts to stop gambling by respondents measured as being at moderate risk for problem gambling, and 55% of attempts by respondents measured as being at high risk for problem gambling, were reported as having been successful. The data do not show shares of the latter group who believe that they have finished with gambling and who may therefore believe that they are no longer at high risk.

EVER SOUGHT PROFESSIONAL HELP? - GAMBLING SEVERITY					
Categories	no risk	low risk	moderate risk	problem gambling	Total
<b>Have you ever sought professional help for gambling related problems?</b>					
<b>yes</b>	0	1	9	11	21
Row%	0%	5%	43%	52%	100%
Col%	0%	13%	5%	11%	7%
<b>no</b>	12	7	164	86	269
Row%	4%	3%	61%	32%	100%
Col%	100%	88%	95%	89%	93%
<b>Total</b>	12	8	173	97	290
Row%	4%	3%	60%	33%	100%
Col%	0%	0%	0%	0%	0%

Only 5% of respondents measured as being at moderate risk for problem gambling, and 11% of respondents measured as being at high risk for problem gambling, have at some time sought professional help. This proportion, though low, is high by world standards. We caution that it is probably inflated by sample selection bias: subjects who have sought help for gambling problems are probably more willing to be surveyed about their gambling behaviour.

This concludes our review of gambling behaviour and attitudes variables. We do not perform a regression analysis of a model that includes these variables as independent for a reason related to the validity of multivariate analysis. 'Risk for problem gambling' is not the sort of outcome variable that counts as *observable* to economists. That is, there is no simple, entirely uncontroversial way of assigning this property to a person. 'Problem gambling' is a *construct*, that is, an interpretation of a cluster of behavioural habits and reports by sufferers. Among the major determinants of assignment of this construct, incorporated into the questions in the PGSI that we use to gauge risk scores, are aspects of gambling behaviour – especially frequency and tendencies to over-spend relative to budgets – and attitudes to consequences of gambling. Thus these behaviours and attitudes cannot be regarded as *independent* of risk for problem gambling. This means that they cannot be used in a standard regression model that takes risk for problem gambling as its outcome variable.

However, one might contend that people's gambling environments, being largely driven by their socio-economic status and their network of friends and family, are determined by factors independent of those that make them more or less vulnerable to problem

gambling. This does not mean that the gambling environment might not itself be among the contributors to gambling problems. Indeed, this is something one can use multivariate regression analysis to investigate.

Our second model takes the demographic variables from our first model (see p. 26), and adds to them the variables for settings in which subjects gamble. Once again, we began by including all gambling setting variables, examined the results for signs of multicollinearity, and then pruned the model. In the pruned model we analyzed to produce Table II below, the new independent variables are ‘Casinos’ (meaning ‘gambles exclusively in legal casinos’), ‘Informal’ (meaning ‘gambles exclusively in informal venues’ and ‘none’ (meaning ‘does not attend any gambling venue’). (For explanation of the elements of the table, please refer back to the discussion on p. 25, preceding our first regression results.)

TABLE II		
OLS REGRESSION OF PGSI SCORE ON DEMOGRAPHIC AND GAMBLING LOCATION VARIABLES		
VARIABLE	COEFFICIENT ESTIMATE	STD. ERROR
Tshwane	-0.52***	(0.14)
West Rand	0.73***	(0.21)
East Rand	-0.028	(0.13)
Cape Town	-0.024	(0.14)
Durban	-0.48***	(0.13)
Medium SES <sup>1</sup>	0.54***	(0.12)
High SES <sup>2</sup>	-0.059	(0.13)
Male	0.030	(0.083)
Age	-0.010***	(0.0035)
Black	0.42***	(0.13)
Coloured	-0.075	(0.16)
Indian	0.093	(0.21)
Tertiary Education	-0.20*	(0.12)
Wages/salaries <sup>3</sup>	-0.61**	(0.28)
Remittances/allowances <sup>4</sup>	-0.0012	(0.18)
Pensions/grants <sup>5</sup>	0.11	(0.18)
Full-time employment	0.51*	(0.28)
Part-time employment	0.56**	(0.28)
Retired	-0.12	(0.21)
No. of dependents	0.0083	(0.034)
Casinos <sup>6</sup>	-0.60***	(0.20)
Informal <sup>7</sup>	0.56***	(0.17)
None <sup>8</sup>	-1.61***	(0.14)
Constant	2.16***	(0.28)
Observations	3000	
R-squared	0.182	
Adjusted R-squared	0.18	

Standard errors in parentheses

\*\*\* represents significance at the 1% level, \*\* represents significance at the 5% level, \* represents significance at the 10% level

<sup>1,2</sup>The variables “Medium SES” and “High SES” refer to a subject’s socioeconomic status and are derived from the type of dwelling the individual inhabits.

<sup>3,4,5</sup>The variables “Wages/salaries”, “Remittances/allowances” and “Pensions/grants” refer to the main source of income of the respondent.

<sup>6,7,8</sup>The variables “Casinos”, “Informal” and “None” refer to the locations where respondents typically gamble.

All of the new variables are statistically significant predictors. The fact that ‘None’ significantly predicts reduced risk for problem gambling should not be regarded as an interesting result, because it includes non-gamblers along with lottery-only and Internet-only gamblers. (Therefore, this model tells us nothing about lottery-only or Internet-only gambling; though we have in any case already seen that lottery-only gamblers have lower prevalence of risk for problem gambling than the sample as a whole.) It is noteworthy that **gambling exclusively in legal casinos predicts reduced risk for problem gambling, and gambling exclusively in**

informal settings predicts elevated risk for problem gambling, at the highest of our three levels of significance. (Each prediction will be correct 99 times out of 100.)

What is also noteworthy are the effects of adding the gambling setting variables to our first model. Being male, which was a significant predictor of enhanced risk for problem gambling in Model #1, now becomes insignificant. Likewise for living in Cape Town, which is no longer a significant predictor of reduced risk for problem gambling in Model #2. The explanation of these changes is almost certainly that gambling in informal settings is very highly correlated with being male, and accounts for the larger preponderance of males in the group that is at high risk for problem gambling. When the Gauteng data are analyzed alone, adding the gambling setting variables also removed significance from the variable Black. This result falls away in the model of the overall data, because Cape Town includes a main group of respondents at high risk for problem gambling who are Black, but who gamble mainly on scratch cards and / or lucky draws rather than at informal casinos. In this respect, heterogeneity of gambling cultures in the different urban centres has the unsurprising effect of reducing model clarity. On the other hand, the larger data set at the national level strengthens the model's power in predicting out of sample (i.e., to unobserved data).

In addition, age, which was a significant predictor of reduced risk for problem gambling at our second-highest level of significance in Model #1, now becomes a significant negative predictor at the highest of our three levels of significance. This reflects the fact that, unlike most other demographic variables, age is not significantly correlated with type of gambling setting patronized. Thus when the latter is explicitly included in Model #2, and demographic factors that proxied for it in Model #1 are shifted into the background, age's significance as a predictive factor emerges more clearly. **Older people face lower risk of problem gambling, independently of the forms of gambling in which they engage.**



Studies of gamblers in the United States (and, to a lesser extent due to less rigorous efforts, elsewhere) have found very high levels of co-occurrence of problem gambling with other so-called *Axis-I disorders*. These include a range of problems diagnosed by the American Psychiatric Association's *Diagnostic and Statistical Manual IV (DSM-IV)*. The most prevalent are clinical depression, anxiety and dependencies on (in everyday language, addictions to) alcohol, tobacco and other substances. Pathological gambling is an *Axis-I* disorder. In light of this, we surveyed participants in our study for evidence of *Axis-I* problems. In addition, the *DSM-IV* classifies pathological gambling as a disorder of *impulsivity* (though this classification is under critical review for *DSM-V*, and the provisional recommendation of the *DSM* drafting group is that it be re-classified as an addiction). We therefore also surveyed study participants on a standard measure of general impulsivity (which is not an *Axis-I* disorder). The results of these surveys furnish the independent variables for our final model of risk for problem gambling.

We administered the Beck Depression Inventory (BDI) to all respondents in our survey. The comparison of respondents' aggregate scores on the BDI with levels of risk for problem gambling are shown in the table below.

BECK'S DEPRESSION INVENTORY - GAMBLING SEVERITY						
Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Depression level</b>						
<b>Minimal depression</b>	1094	945	249	161	55	2504
Row%	44%	38%	10%	6%	2%	100%
Col%	85%	88%	80%	71%	57%	83%
<b>Mild depression</b>	89	69	23	26	14	221
Row%	40%	31%	10%	12%	6%	100%
Col%	7%	6%	7%	11%	14%	7%
<b>Moderate depression</b>	63	38	25	23	16	165
Row%	38%	23%	15%	14%	10%	100%
Col%	5%	4%	8%	10%	16%	6%
<b>Severe depression</b>	45	22	13	18	12	110
Row%	41%	20%	12%	16%	11%	100%
Col%	3%	2%	4%	8%	12%	4%
<b>Total</b>	1291	1074	310	228	97	3000
Row%	43%	36%	10%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

There is a clear relationship between evidence of depression and measurement of high risk for problem gambling. 42% of respondents measured as being at high risk for problem gambling are at least mildly depressed, by comparison with 15% of respondents who are measured as being at no risk for problem gambling. The relationship is much weaker for levels of risk for problem gambling below "high". We are not presently able to comment on the possible directions of causation here, that is, on whether depression leads people to gamble destructively, or whether gambling problems make people depressed. These relationships are in any case not mutually exclusive. We will comment further on this issue below, as it is directly relevant to interpretation of our third model.

Next we compare respondents' BDI scores with types of gambling settings patronised.

## BECK'S DEPRESSION INVENTORY - GAMBLING LOCATION

Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Depression level</b>									
<b>Minimal depression</b>	192	64	280	1807	25	45	59	32	2504
Row%	8%	3%	11%	72%	1%	2%	2%	1%	100%
Col%	93%	90%	74%	84%	89%	74%	83%	73%	83%
<b>Mild depression</b>	8	4	36	161	1	5	5	1	221
Row%	4%	2%	16%	73%	0%	2%	2%	0%	100%
Col%	4%	6%	10%	8%	4%	8%	7%	2%	7%
<b>Moderate depression</b>	3	2	36	105	0	7	4	8	165
Row%	2%	1%	22%	64%	0%	4%	2%	5%	100%
Col%	1%	3%	10%	5%	0%	11%	6%	18%	6%
<b>Severe depression</b>	3	1	24	70	2	4	3	3	110
Row%	3%	1%	22%	64%	2%	4%	3%	3%	100%
Col%	1%	1%	6%	3%	7%	7%	4%	7%	4%
<b>Total</b>	206	71	376	2143	28	61	71	44	3000
Row%	7%	2%	13%	71%	1%	2%	2%	1%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Much higher levels of moderate and severe depression are indicated by respondents who gamble exclusively in informal venues than by respondents who gamble exclusively in legal casinos.

Clinicians, and the *DSM-IV*, distinguish depression from anxiety, although they share a number of symptoms. We administered the Beck Anxiety Inventory (BAI) to all respondents. Below we compare the results with results on levels of risk for problem gambling.

## BECK'S ANXIETY INVENTORY - GAMBLING SEVERITY

Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Anxiety level</b>						
<b>Minimal anxiety</b>	986	902	211	125	40	2264
Row%	44%	40%	9%	6%	2%	100%
Col%	76%	84%	68%	55%	41%	75%
<b>Mild anxiety</b>	140	104	47	47	23	361
Row%	39%	29%	13%	13%	6%	100%
Col%	11%	10%	15%	21%	24%	12%
<b>Moderate anxiety</b>	101	45	26	29	19	220
Row%	46%	20%	12%	13%	9%	100%
Col%	8%	4%	8%	13%	20%	7%
<b>Severe anxiety</b>	64	23	26	27	15	155
Row%	41%	15%	17%	17%	10%	100%
Col%	5%	2%	8%	12%	15%	5%
<b>Total</b>	1291	1074	310	228	97	3000
Row%	43%	36%	10%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

There is a clear association between clinical anxiety and measurement of high risk for problem gambling. However, given the high rate of co-occurrence of clinical anxiety with clinical depression, the significance of these relationships cannot be determined in advance of further modeling, to follow below.

Next we compare BAI scores with responses on type of gambling settings patronised.

BECK'S ANXIETY INVENTORY - GAMBLING LOCATION									
Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
Anxiety level									
<b>Minimal anxiety</b>	174	64	226	1647	22	40	57	34	2264
Row%	8%	3%	10%	73%	1%	2%	3%	2%	100%
Col%	84%	90%	60%	77%	79%	66%	80%	77%	75%
<b>Mild anxiety</b>	21	2	71	245	3	9	9	1	361
Row%	6%	1%	20%	68%	1%	2%	2%	0%	100%
Col%	10%	3%	19%	11%	11%	15%	13%	2%	12%
<b>Moderate anxiety</b>	1	3	46	154	2	6	4	4	220
Row%	0%	1%	21%	70%	1%	3%	2%	2%	100%
Col%	0%	4%	12%	7%	7%	10%	6%	9%	7%
<b>Severe anxiety</b>	10	2	33	97	1	6	1	5	155
Row%	6%	1%	21%	63%	1%	4%	1%	3%	100%
Col%	5%	3%	9%	5%	4%	10%	1%	11%	5%
<b>Total</b>	206	71	376	2143	28	61	71	44	3000
Row%	7%	2%	13%	71%	1%	2%	2%	1%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

There appears to be a clear positive relationship between evidence of clinical anxiety and exclusively patronising informal gambling venues.

Studies of gamblers in several countries have found very high levels of co-occurrence of problem gambling with risk for alcohol abuse and dependence. We therefore administered the World Health Organization (WHO) Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) for risk of alcohol abuse and dependency to all respondents. The comparison of respondents' aggregate scores on the WHO survey with levels of risk for problem gambling are shown in the table below.

WHO-ASSIST:ALCOHOL RISK LEVEL - GAMBLING SEVERITY						
Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
Risk level						
<b>Low risk</b>	1181	929	238	142	56	2546
Row%	46%	36%	9%	6%	2%	100%
Col%	91%	86%	77%	62%	58%	85%
<b>Moderate risk</b>	95	128	60	63	26	372
Row%	26%	34%	16%	17%	7%	100%
Col%	7%	12%	19%	28%	27%	12%
<b>High risk</b>	15	17	12	23	15	82
Row%	18%	21%	15%	28%	18%	100%
Col%	1%	2%	4%	10%	15%	3%
<b>Total</b>	1291	1074	310	228	97	3000
Row%	43%	36%	10%	8%	3%	100%
Col%	100%	100%	100%	100%	100%	100%

There is a very strong and clear relationship between risk for alcohol dependence and risk for problem gambling.

Next we compare WHO Alcohol Survey scores with respondents' indications of types of gambling settings patronized.

WHO-ASSIST:ALCOHOL RISK LEVEL - GAMBLING LOCATION									
Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Risk level</b>									
<b>Low risk</b>	172	58	268	1898	26	39	54	31	2546
Row%	7%	2%	11%	75%	1%	2%	2%	1%	100%
Col%	83%	82%	71%	89%	93%	64%	76%	70%	85%
<b>Moderate risk</b>	30	13	84	198	2	18	15	12	372
Row%	8%	3%	23%	53%	1%	5%	4%	3%	100%
Col%	15%	18%	22%	9%	7%	30%	21%	27%	12%
<b>High risk</b>	4	0	24	47	0	4	2	1	82
Row%	5%	0%	29%	57%	0%	5%	2%	1%	100%
Col%	2%	0%	6%	2%	0%	7%	3%	2%	3%
<b>Total</b>	206	71	376	2143	28	61	71	44	3000
Row%	7%	2%	13%	71%	1%	2%	2%	1%	100%
Col%	100%	100%	100%	100%	100%	100%	100%	100%	100%

There is a clear relationship between being at moderate or high risk for alcohol problems and exclusively patronising informal gambling settings.

We administered the WHO survey for all other drugs that, according to South African Police Services, are used at significant levels by South Africans for narcotic purposes. None of these drugs (including cannabis) were reported as used among our respondents in numbers high enough to merit specifically reporting.

Pathological gambling (PG) has historically been classified by psychiatrists as a variety of impulsivity disorder. This has recently been questioned by critics who cite evidence that PG should be grouped with the addictions, and whose point of view appears likely to be reflected in the forthcoming new edition of the DSM. In order to gather evidence relevant to this controversy, we administered the Barrett's Impulsivity Scale (BIS) to all respondents in our survey. Below we compare scores with levels of risk for problem gambling and with types of gambling settings patronised.

STATISTICS: BARRATT'S IMPULSIVENESS SCALE - GAMBLING SEVERITY							
BIS Statistics	Categories	no gambling	no risk	low risk	moderate risk	problem gambling	Total
<b>Number of Observations</b>		1291	1074	310	228	97	3000
<b>Mean</b>		60.54	62.77	62.14	60.53	67.71	61.74
<b>Median</b>		61	63	61	61	67	62
<b>Standard deviation</b>		11.52	10.35	11.61	11.42	13.82	11.29

No relationship between BIS scores and PGSI scores emerges in the data until respondents measured as being at high risk for problem gambling are compared with all others. The high-risk scorers have notably higher BIS scores. Thus our data lend some support to the traditional view that pathological gambling is associated with more general impulsivity.

STATISTICS: BARRATT'S IMPULSIVENESS SCALE - GAMBLING LOCATION										
BIS Statistics	Location	Casinos	Other legal	Informal	None	All legal	Other legal and informal	Casinos and informal	All	Total
<b>Number of Observations</b>		206	71	376	2143	28	61	71	44	3000
<b>Mean</b>		63.29	63.37	62.53	61.15	63.18	61.84	64.41	67.98	61.74
<b>Median</b>		63	62	62	61	64	60	64	67	62
<b>Standard deviation</b>		9.07	10.62	11.30	11.51	7.03	12.10	10.26	10.58	11.29

These data show no significant relationship.

We now take the above variables and add them to Model #2 to produce the third and final multivariate regression analysis of the present report. This time we did not prune variables on the basis of observed multicollinearity. However, instead of including separate independent variables for each drug, other than alcohol and tobacco, on which respondents were surveyed, we constructed a variable that represents each subject's highest WHO score on an 'other' drug. (For the many respondents who use no 'other' drug, this score is 0.) (This was necessary because including separate variables for a host of 'other' drugs used by only small subsets of the sample would have seriously distorted the results of our overall analysis.) The results of analysis of this model are shown in Table III below.

<b>TABLE III</b>		
<b>OLS REGRESSION OF PGSI SCORE ON DEMOGRAPHIC, GAMBLING LOCATION AND COMORBIDITY VARIABLES</b>		
<b>VARIABLE</b>	<b>COEFFICIENT ESTIMATE</b>	<b>STD. ERROR</b>
Tshwane	-0.27**	(0.14)
West Rand	0.64***	(0.21)
East Rand	0.048	(0.13)
Cape Town	0.20	(0.13)
Durban	-0.27**	(0.13)
Medium SES <sup>1</sup>	0.54***	(0.12)
High SES <sup>2</sup>	0.095	(0.13)
Male	-0.068	(0.085)
Age	-0.0078**	(0.0034)
Black	0.23*	(0.13)
Coloured	-0.23	(0.15)
Indian	0.16	(0.21)
Tertiary Education	-0.12	(0.12)
Wages/salaries <sup>3</sup>	-0.69**	(0.27)
Remittances/allowances <sup>4</sup>	-0.028	(0.18)
Pensions/grants <sup>5</sup>	-0.020	(0.17)
Full-time employment	0.71***	(0.27)
Part-time employment	0.57**	(0.27)
Retired	-0.025	(0.21)
No. of dependents	0.021	(0.033)
Casinos <sup>6</sup>	-0.47**	(0.20)
Informal <sup>7</sup>	0.49***	(0.17)
None <sup>8</sup>	-1.42***	(0.14)
BDI score <sup>9</sup>	0.031***	(0.0060)
BAI score <sup>10</sup>	0.0070	(0.0059)
BIS score <sup>11</sup>	0.028***	(0.0049)
WHO ASSIST - alcohol score <sup>12</sup>	0.041***	(0.0060)
Smoke tobacco	-0.076	(0.096)
WHO ASSIST - Highest drug score <sup>13</sup>	0.034***	(0.011)
Constant	-0.23	(0.41)
Observations	3000	
R-squared	0.235	
Adjusted R-squared	0.23	

Standard errors in parentheses

\*\*\* represents significance at the 1% level, \*\* represents significance at the 5% level, \* represents significance at the 10% level

<sup>1,2</sup>The variables "Medium SES" and "High SES" refer to a subject's socioeconomic status and are derived from the type of dwelling the individual inhabits.

<sup>3,4,5</sup>The variables "Wages/salaries", "Remittances/allowances" and "Pensions/grants" refer to the main source of income of the respondent.

<sup>6,7,8</sup>The variables "Casinos", "Informal" and "None" refer to the locations where respondents typically gamble.

<sup>9</sup> Subject score on the Beck's Depression Inventory (BDI)

<sup>10</sup> Subject score on the Beck's Anxiety Inventory (BAI)

<sup>11</sup> Subject score on the Barratt's Impulsiveness Scale (BIS)

<sup>12</sup> Subject score for alcohol use on the WHO ASSIST

<sup>13</sup> The subject's highest score on the WHO ASSIST across all drug categories (excluding alcohol)

Depression (BDI) score, WHO ASSIST alcohol score, WHO ASSIST “highest drug” score, and BIS score all emerge as predictors of increased risk for problem gambling at the highest of our three levels of significance. Anxiety (BAI) score does not emerge as a significant factor, suggesting that the observed association between this variable and risk for problem gambling is explained by a third factor, possibly co-occurrence of diagnostic symptoms of depression and anxiety.

Relationships between risk for problem gambling and other independent variables from Model #2 undergo some transformations when we move to Model #3. Residence in Tshwane and in Durban remain significant predictors of reduced risk for problem gambling, but now only at the second lowest of our three levels of statistical significance (correctly predicting 95 times out of 100). This change might reflect the presence in the data of a few Tshwane and Durban high-risk gamblers who suffer from other Axis-I disorders. Interestingly, the Black variable, which was a significant predictor of increased risk for problem gambling at the highest of our three levels of significance in Model #2, now falls to significance only at the lowest of our three levels. Furthermore, if the Cape Town data are removed from the analysis, the significance of the Black variable falls away altogether. It is intriguing that inclusion of the Axis-I variables has this effect on the most salient of the population group variables. In addition, the Age variable, which was a predictor of reduced risk for problem gambling at the highest of our three levels of significance in Model #2, now becomes a negative predictor at only the second-highest of our three levels. Finally, having full-time employment now becomes a predictor of enhanced risk for problem gambling at the highest of our three levels of statistical significance. This is likely to seem to be an intuitively puzzling result, especially in light of the fact that earning the highest share of income from wages and salaries remains a predictor of *reduced* risk for problem gambling. This oddity may reflect presence in the data of some participants at high risk for problem gambling who have full-time jobs and who suffer from no co-occurring Axis-I disorders.

**Model #3 should not be regarded as offering the definitive picture of problem gambling and its determinants in urban South Africa.** There are various reasons for this, but one crucial one is that it incorporates the doubtful assumption that causal relationships between risk for problem gambling and co-occurring Axis-I disorders all run from the latter to the former. This is almost certainly false: some respondents, for example, are almost certainly made more depressed than they would otherwise be by the facts and consequences of their gambling problems. In some instances, causal relations may involve mutual amplification: more gambling leads to deeper depression or more drinking, which occasions more gambling, and so on. The existence of two-way causal determination, both between subjects and within subjects, distorts the results of standard regression techniques. If these distortions are strong, one should expect to see their effects in changes on variable coefficients as we go from Model #2 to Model #3.

**In light of this, it is reassuring and informative that most significant predictor variables from Model #2 do not change when we move to Model #3, even though almost all of the new Model #3 variables are significant predictors. This constitutes evidence that the factors identified as significant predictors in Model #2 really are important determinants of risk for problem gambling.**

The reader should now see what we meant when we said that our *sequence* of models would be used to “tell a story”. No one of the models, by itself, constitutes the snapshot of problem gambling in urban South Africa. However, **we think that the observations as we move from model to model warrant the following tentative conclusions. Important factors for risk of problem gambling in urban South Africa are living in communities dominated by patronage of informal gambling establishments rather than legal ones, being younger, being depressed, and abusing or being dependent on alcohol and / or other drugs.**

As noted at the beginning of the present report, South Africa’s cities exhibit heterogeneous gambling cultures. The Durban sample is too small for separate analysis, and the Cape Town sample just barely large enough to meaningfully analyze by itself. Nevertheless, it is worthwhile comparing the results of our separate applications of Model #3 to Gauteng as a whole and to Cape Town. This comparison is shown in tabular form below. All variables that are significant predictors of risk for problem gambling at any of our three levels of significance are shown. Negative predictors are indicated by (e.g.)  $-(***)$ .

VARIABLE	CAPE TOWN	GAUTENG
Lives in West Rand	n/a	***
Lives in Tshwane	n/a	-(*)
Medium SES	***	***
Age	not significant	-(***)
Tertiary education	not significant	-(*)
Wages or salary is main source of income	not significant	-(**)
Pensions / grants is main source of income	**	-(**)
Exclusively patronises legal casinos	-(*)	-(***)
Exclusively patronises informal gambling venues	*	***
Patronises no gambling establishment	-(***)	-(***)
BDI score	not significant	***
BAI score	not significant	**
BIS score	***	not significant
WHO ASSIST alcohol score	**	***
WHO ASSIST highest drug score	not significant	***

One pure anomaly in this comparison is the pensions / grants variable, which is significant in both samples but in opposite directions. This is not surprising for Gauteng, where most problem gamblers are wage-earners. We have no hypothesis to shed further light on distinctive significance of pension / grant income among people at high risk for problem gambling in Cape Town.

Note that no population group variables are significant in either separate analysis. The variable Black becomes a marginally significant predictive factor only at the aggregate level. We suspect that this reflects the fact that being Black is correlated with being at high risk for problem gambling in both Gauteng and Cape Town, but through association with different variables in the two cases.

In Gauteng, problem gambling is very heavily concentrated in the mining areas of the West Rand. It is mainly associated with younger adults who gamble in informal establishments where the principal forms of gambling are dice and card games for money. These gamblers do not visit legal casinos. Problem gambling is also strongly associated with playing *fafi* / *iChina*. These problem gamblers tend to suffer from other Axis-I comorbidities (depression, anxiety, alcohol and drug dependence). Causal relationships among these disorders, including problem gambling, are almost certainly multidirectional.

In Cape Town the picture is importantly different. Though inferences from the sample are much less reliable due to its smaller size, the overall set of contrasts with Gauteng make sense. Cape Town problem gamblers tend to be slightly poorer, but otherwise of comparable SES to those in Gauteng. They do not mainly gamble in informal establishments, or indeed in any establishments. They therefore do not mainly play dice or card games. In addition they do not play fafi / iChina, reflecting differences in cultural composition between the two areas. Cape Town problem gamblers primarily devote their attention to lotteries, scratch cards and lucky draws. They play these regularly, but not more frequently than gamblers at no risk for problem gambling. It is probable that their *problems* from gambling mainly arise from their small incomes, which mean that any regular expenditure contributes to hardship. The only Axis-I comorbidity that characterizes them statistically is alcohol dependence. They show high impulsivity; however, it should be noted that this is a personality trait, not a psychiatric disorder, and may also be related to stressful environments associated with relative poverty. Interestingly, when Model #3 is applied to the Gauteng data alone, BIS score becomes an insignificant predictor, notwithstanding the larger weight of the Gauteng sub-sample in the overall sample.

Clearly it should not be inferred from the data presented here that there are no problem gamblers in urban South Africa whose gambling problems are associated with behaviour at legal casinos. What is overwhelmingly likely is simply that this group is small, and could only be statistically expected to be visible in a much larger sample than our study was able to draw. Recent prevalence studies of gambling and problem gambling in wealthy countries – the USA, the UK, Canada, Australia, and Sweden – find that 0.5-0.7% of adults meet the DSM criteria for pathological gambling. Suppose, speculatively, that there is a similar proportion among the part of South Africa's population who enjoy consumption patterns similar to median middle-class patterns in wealthy countries. This would predict a population of casino-focused problem gamblers that would tend to be invisible to any but the very largest random surveys.

In this context, however, it is important to emphasize that **in our sample, casino gambling is negatively associated with problem gambling. Urban South Africans who exclusively patronise legal casinos are at less risk for problem gambling than the average member of the population, even though 43% of the overall sample reports not gambling at all.** We think it is reasonable to conclude from our data that **in South African cities, problem gambling resembles problem drinking in being mainly a risk associated with relative poverty** – though not with the very most dire poverty, which leaves its victims with insufficient money even for these accessible forms of consolation consumption. As our data show, being employed and of medium SES in SA increase statistical risk for problem gambling.

**We suggest that to miss surveying a sub-population because it is tiny justifies concluding that its difficulties do not constitute a major social problem from the perspective of the society at large. Of course, there is no objection to social action designed to improve the welfare of any group, however small. Cost-benefit analysis for policy choice, however, will generally have to attach high weight to statistical prevalence.**

The relationship between informal gambling and risk for problem gambling is significantly stronger in Gauteng than in Cape Town or Durban. **Gauteng's problem gamblers tend to gamble out of boredom and for excitement, though also in hopes of relieving financial problems. Many of them might switch to legal gambling if venues for it were more accessible to them (geographically, financially, and perhaps culturally).**

**Our data do not suggest that the lottery is a significant contributor to problem gambling in urban South Africa.**

The relationships between problem gambling and informal gambling are much stronger in South Africa than in any other country in which similar prevalence studies have been carried out. Unfortunately, no other study of gambling and problem gambling prevalence, with which the present study might be more informatively compared, has ever been conducted in another developing or middle-income country.