

**REPORT OF SURVEY ON PARTICIPATION IN
GAMBLING ACTIVITIES AMONG SINGAPORE
RESIDENTS, 2008**



MINISTRY OF COMMUNITY DEVELOPMENT, YOUTH AND SPORTS
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The MCYS conducted a second survey on participation in gambling activities among Singapore residents in 2008. The first survey was done in 2005 to serve as the baseline for tracking the pattern and profile of gambling among Singapore residents.

OBJECTIVES OF STUDY

2. The objectives of this survey are to:
 - a. Assess the extent and pattern of gambling among Singapore residents aged 18 years and above; and
 - b. Ascertain the prevalence and profile of probable problem and pathological gamblers (PPGs).
3. Screening questions based on an internationally established diagnostic tool (DSM-IV¹) were included in the survey to identify probable pathological or problem gamblers. Details of the survey methodology are provided at [Annex A](#).

GAMBLING PATTERNS

4. Similar to the 2005 survey, respondents in the 2008 survey who had participated in at least one form of gambling in the last 12 months were classified as gamblers.

Overall Gambling Participation

5. In the 2008 survey, 54% of Singapore residents aged 18 and above reported that they have participated in at least one form of gambling activity in the last 12 months, compared to 58% in the baseline survey in 2005. The analyses suggested that the change from 58% in 2005 to 54% in 2008 was likely due to random fluctuations of gambling participation rate over time.

Gambling Participation by Demographic Groups

6. Relatively higher gambling participation are found among the following groups (see [Annex B, Table B1](#)):
 - a. Chinese (62%)
 - b. Male (60%)
 - c. Residents aged 40 to 59 years (60% - 64%)
 - d. Residents with primary education and below (61%)
 - e. Residents with average monthly personal income of \$2,999 and below (60% - 66%)²

¹ Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV) (see [Annex C](#) for details). The DSM-IV was also used in similar surveys in Hong Kong, Macau, and the United States.

² This excludes those with no income.

Gambling Participation by Type of Gambling Activities

7. The 2008 survey found that lotteries (4D (47%) and TOTO (33%)) remain the most popular gambling activities among residents, although the proportions are lower than those found in 2005 (4D (53%), TOTO (39%)). Social gambling (23%)³ has overtaken Singapore Sweep (17%) to be the third most popular gambling activity in 2008 (see Annex B, Table B2).

Betting Amounts

8. The median monthly betting amount on games in 2008 was \$100, up from \$83 in 2005. However, the average monthly betting amount was lower at \$176, compared to \$244 in 2005 (see Annex B, Table B3). In both surveys, the monthly average betting amount was generally higher for those with higher personal incomes than those with lower personal incomes (see Annex B, Table B4).

Starting Age and Gambling Activity

9. In 2008, 75% of the respondents who have ever gambled stated that they started to gamble at the age of 24 or younger, up from 63% in 2005. About 70% of these respondents in the 2008 survey started to gamble regularly (at least once a week) before they turned 30 years old, compared to about 60% of their counterparts in 2005 (see Annex B, Table B5). Most started with 4D and social gambling (see Annex B, Table B6).

PERCEPTION TOWARDS VARIOUS GAMBLING FORMS

10. The proportion of respondents who considered 4D, TOTO, Singapore Sweep and Social Gambling as leisure activities had increased substantially in 2008 (49 - 54%), compared to 2005 (25 - 36%). There were also increases, although of much smaller magnitudes, for harder forms of gambling, such as horse betting, table games in cruises / casinos in other countries, sports betting and jackpot machines (2008: 13 - 24% vs 2005: 8 - 20%) (see Annex B, Table B7).

PROBABLE PROBLEM AND PATHOLOGICAL GAMBLING

11. Based on the screening criteria (see Annex C), the 2008 survey found that between 0.7% and 1.6% of the respondents may be classified as probable pathological gamblers. In terms of a single point estimate, the proportion of respondents classified as probable pathological gamblers is 1.2% in the 2008 survey, compared to 2.1% in 2005. However, the analyses suggested that the change from 2.1% in 2005 to 1.2% in 2008 was likely due to random fluctuations of the probable gambling rate over time (see Annex B, Table B8).

12. The 2008 survey found that between 1.1% to 2.2% of the respondents may be classified in the less severe category of probable problem gamblers. In terms of a

³ Social gambling refers to playing mahjong, card games or other games with friends or relatives involving money.

single point estimate, the proportion of respondents classified in this category is 1.7%, compared to 2.0% in 2005. Similarly, the analyses suggested that the change from 2.0% in 2005 to 1.7% in 2008 was likely due to random fluctuations of the probable problem gambling rate over time (see Annex B, Table B8).

13. Slightly higher prevalence of probable pathological gambling was found among the following profiles (see Annex B, Table B9):

- a. Male (1.7%)
- b. Chinese (1.4%)
- c. Those aged 30 to 59 years (1.4 - 1.7%)
- d. Those with “O” level/ ITE/ VITB education (2.4%)
- e. Monthly personal income of \$1,000-\$2,999 (2.1 - 2.3 %)

14. The 2008 survey found that the median monthly betting amount of probable pathological gamblers was \$450⁴, up from \$400 in 2005. In comparison, the median monthly betting amount among all gamblers was much lower, at \$100 in 2008 and \$83 in 2005 (see Annex B, Table B10).

15. In terms of gambling frequency, the 2008 survey found that all probable pathological gamblers reported having gambled at least once a week in the last 12 months, compared to 71% for all gamblers. These results were similar to the findings in the 2005 survey (see Annex B, Table B11).

16. All the probable pathological gamblers in 2008 indicated that they started gambling regularly at the age of below 30 years old, up from 76% in 2005. About 18% of the probable pathological gamblers started regular gambling below 18 years old, up from 7% in 2005 (see Annex B, Table B12).

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⁴ Figures to be interpreted with caution due to small sample size for probable pathological gamblers.

SURVEY METHODOLOGY**Sampling and Data Weighting**

A probability disproportionate stratified sampling method was used to select the subjects. From a sampling frame of residents' addresses, a randomly selected sample of 2,300 Singapore residents was interviewed using a structured questionnaire between November 2007 and January 2008. The minority ethnic groups were over-sampled to allow for meaningful analysis. The survey achieved a response rate of 89%, thus ensuring that the results were representative. Post-survey weightings were applied based on corresponding cohort proportions from published resident figures by Department of Statistics as of June 2007.

Questionnaire Design

2. The survey was conducted via face-to-face interviews. The screening questions to detect probable problem and pathological (PPG) gamblers were based on diagnostic criteria in the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV) developed by the American Psychiatric Association (APA)⁵. The same diagnostic criteria were used in similar studies in Hong Kong⁶, Macau⁷ and the United States⁸.

Qualifications and Mitigating Factors

3. Given that the main instrument used in the study is a survey, we can only capture "self-professed" behaviour rather than actual behaviour. Social desirability may also undermine the gambling and problem gambling participation as the survey touched on sensitive gambling habits and family relations. To mitigate this, surveyors were asked to assure interviewees about the strict confidentiality of individual responses at two prescribed junctures of each interview.

4. A statistical test on the reliability of the tool revealed that the screening questions were reasonably consistent (Cronbach's alpha of 0.71).

⁵ A clinical validation test had been conducted in the US as part of the refinement process of the DSM-IV diagnostic tool on problem and pathological gambling. Gerstein, D. R., R. A. Volberg, M. T. Toce, H. Harwood et al. 1999. Gambling Impact and Behavior Study: Report to the National Gambling Impact Study Commission. Chicago, IL: National Opinion Research Center at the University of Chicago. Toce-Gerstein, Marianna, Dean R. Gerstein & Rachel A. Volberg. 2003. "A Hierarchy of Gambling Disorders in the General Population," *Addiction* 98: 1661-1672.

⁶ Hong Kong's Home Affairs Bureau commissioned the Hong Kong Polytechnic University to conduct a study of Hong Kong people's participation in gambling activities in 2001/2. In 2005, the survey was conducted by the Social Sciences Research Centre of the University of Hong Kong.

⁷ The University of Macau conducted a study on gambling participation in Macau in 2003.

⁸ Gerstein, D. R., R. A. Volberg, M. T. Toce, H. Harwood et al. 1999. Gambling Impact and Behavior Study: Report to the National Gambling Impact Study Commission. Chicago, IL: National Opinion Research Center at the University of Chicago.

**Table B1 – Gambling Participation Rates
by Demographic Groups (%) in the last 12 months**

	2005	2008
Overall	58	54
Ethnicity		
Chinese	68	62
Malay	12	22
Indian	30	36
Gender		
Male	61	60
Female	56	49
Age Group (Years)		
18 to 29	47	42
30 to 39	63	57
40 to 49	69	64
50 to 59	57	60
60 and above	52	43
Highest Education Level		
PSLE and below	60	61
GCE 'O' Level/ ITE/ VITB	53	52
GCE 'A' Level / Polytechnic	67	51

**Table B1 – Gambling Participation Rates
by Demographic Groups (%) in the last 12 months (continued)**

	2005	2008
Highest Education Level		
University Degree and above	66	52
Monthly Personal Income (\$)		
No Income	50	43
1 – 999	50	60
1,000 – 1,999	63	66
2,000 – 2,999	72	62
3,000 – 3,999	70	56
4,000 and above	74	56
Marital Status		
Never Married	51	46
Married with no children	68	64
Married with children	61	57
Divorced/Separated/ Widowed	48	42

**Table B1 – Gambling Participation Rates
by Demographic Groups (%) in the last 12 months (continued)**

	2005	2008
Religion		
Taoism	77	66
Buddhism	72	65
No Religion	67	62
Christianity	55	47
Hinduism	34	42
Islam	13	21

Note:
Percentages were based on the corresponding demographic cohort size in the sample.

**Table B2 – Gambling Participation Rates by Type of Games (%)
in the last 12 months**

Types of Games	2005 (%)	2008 (%)
All Games	58	54
4D	53	47
TOTO	39	33
Social Gambling	17	23
Singapore Sweep	31	17
Sports Betting	8	9
Table games (local and overseas venues)	3	9
Jackpot machines (local and overseas venues)	7	8
Horse Betting	4	6
Online Gambling	0.1	1

**Table B3 – Monthly Median (Average) Betting Amount (\$)
in Gambling Activities in last 12 months**

Types of Games	Monthly Median Betting Amount (average figures in brackets)	
	2005	2008
All Games	\$83 (\$244)	\$100 (\$176)
Table games by Cruises / Casinos in other countries	\$100 (\$288)	\$200 (\$261)
Sports Betting	\$200 (\$387)	\$100 (\$160)
Horse Betting	\$100 (\$194)	\$100(\$142)
Jackpot machines in Cruises/ Casinos in other countries	\$50 (\$168)	\$50 (\$88)
Social Gambling	\$100 (\$151)	\$50 (\$81)
Jackpot machines in Local Clubs	\$100 (\$127)	\$50 (\$56)
4D	\$50 (\$93)	\$40 (\$65)
TOTO	\$20 (\$48)	\$20 (\$25)
Singapore Sweep	\$10 (\$27)	\$10 (\$15)

**Table B4 – Monthly Average Betting Amount (last 12 months)
by Monthly Personal Income⁹ (%)**

Monthly Personal Income	Average Betting Amount per month					
	\$100 and below	\$101-\$300	\$301-\$500	\$501-\$1,000	More than \$1,000	Total
No Income	62 (78)	33 (14)	3 (4)	2 (4)	0 (0.4)	100 (100)
\$1-\$999	79 (75)	21 (19)	0 (6)	0 (0)	0 (0)	100 (100)
\$1,000-\$1,999	51 (53)	31 (35)	12 (8)	5 (4)	0.8 (0)	100 (100)
\$2,000-\$2,999	45 (49)	32 (31)	11 (11)	10 (8)	1 (1)	100 (100)
\$3,000-\$3,999	39 (43)	39 (23)	5 (16)	10 (10)	8 (9)	100 (100)
\$4,000 and above	39 (47)	39 (17)	5 (12)	10 (8)	8 (17)	100 (100)

Note:

Percentages for the 2005 survey in brackets

Figures may not add up to 100% due to rounding off error.

⁹ Figures are estimates reported by the respondents, and may exclude some sources of income.

**Table B5 – Starting Age of First Gambling and Regular Gambling Participation
(at least once a week) (%)**

Age group	2005		2008	
	First Gambling Participation (%)	First Regular Gambling Participation (%)	First Gambling Participation (%)	First Regular Gambling Participation (%)
Below 18 Years	14	4	24	3
18-24	49	38	51	36
25-29	15	19	10	30
30-39	15	24	10	23
40-49	5	9	3	7
50-59	1	5	2	2
60 and above	1	1	0.1	0.2

Note: Figures may not add up to 100% due to rounding off error.

**Table B6 – First Gambling Activity and First Regular Gambling Activity
(at least once a week) (%)**

Types of Games	2005		2008	
	First Gambling Activity (%)	First Regular Gambling Activity (%)	First Gambling Activity (%)	First Regular Gambling Activity (%)
4D	64	78	48	71
Social Gambling	20	9	36	11
TOTO	7	6	6	6
Singapore Sweep	4	2	2	0.7
Sports Betting	2	2	6	9
Horse Betting	1	2	0.3	2
Jackpot machines in Cruises/ Casinos in other countries	0.7	0.3	0.7	0
Jackpot machines in Local Clubs	0.4	0.3	0.4	0
Table games in Cruises/ Casinos in other countries	0.2	0	1	0
Online Gambling	0	0	0	0.7
Others	0.9	0	0.1	0.2

Note: Figures may not add up to 100% due to rounding off error.

Table B7 – Perceptions of Various Gambling Forms as “Leisure” Activities

Games	All respondents		Gamblers		Non-Gamblers	
	2005 (%)	2008 (%)	2005 (%)	2008 (%)	2005 (%)	2008 (%)
Online Gambling	8	7	11	8	3	5
Horse Betting	8	13	12	19	2	6
Table games in Cruises/ Casinos in other countries	9	15	14	21	3	8
Sports Betting	15	19	21	25	6	12
Jackpot machines in Cruises/ Casinos in other countries	15	22	20	30	7	13
Jackpot machines in Local Clubs	20	24	27	31	9	15
4D	25	49	36	59	11	39
TOTO	27	49	37	58	11	39
Singapore Sweep	29	51	40	59	14	42
Social Gambling	36	54	48	60	19	46

Non-Gamblers: Did not participate in gambling activities in the last 12 months.

Table B8 – Prevalence of Probable Pathological and Problem Gambling

	2005	2008
Probable Pathological Gambling	2.1 (1.5% to 2.8%)	1.2 (0.7% to 1.6%)
Probable Problem Gambling	2.0 (1.4% to 2.6%)	1.7 (1.1% to 2.2%)
Total – last 12 months	4.1 (3.3% to 5.0%)	2.9 (2.1% to 3.5%)

Note: Figures in brackets refer to confidence interval at 95% level. The analyses suggest that the changes in rates from 2005 to 2008 were due to random fluctuations of the respective rates over time.

Table B9 – Prevalence of Probable Pathological Gambling by Demographic Groups (last 12 months)

Profiles	Probable Pathological Gamblers (%)	
	2005	2008
Ethnicity		
Chinese	2.7	1.4
Malay	0.4	0.4
Indian	0*	0.5
Gender		
Male	3.1	1.7
Female	1.2	0.6
Age Group (Years)		
18 to 29	0.9	0.4
30 to 39	4.3	1.4
40 to 49	3.3	1.5
50 to 59	0.9	1.7
60 and above	0*	0.9
Highest Education Level		
PSLE and below	2.3	0.9
GCE 'O' Level/ ITE / VITB	2.5	2.4
GCE 'A' Level and Polytechnic	3.2	0.4
University and above	0.8	0*

Profiles	Probable Pathological Gamblers (%)	
	2005	2008
Monthly Personal Income (\$)		
No Income	0.5	0.8
1 – 999	0.7	0*
1,000 – 1,999	2.1	2.3
2,000 – 2,999	4.2	2.1
3,000 – 3,999	5.9	1.1
4,000 and above	4.7	0*
Marital Status		
Never Married	2.3	0.7
Married with no children	3.2	1.6
Married with children	1.7	1.4
Divorced/ Separated/ Widowed	5.6	0*
Religion		
Taoism	3.0	2.0
Buddhism	2.9	1.7
No Religion	3.8	1.5
Hinduism	0*	0.8
Islam	0.4	0.6
Christianity	1.5	0*

Note:

Percentages were based on the corresponding demographic cohort size in the sample.

* None detected as probable pathological gamblers in the sample.

**Table B10 - Monthly Median (Average) Betting Amount
in Gambling Activities (\$) in last 12 months**

Types of Games	Median (Average) Betting Amount		Median (Average) Betting Amount (among Probable Pathological Gamblers)	
	2005	2008	2005	2008
All Games	\$83 (\$244)	\$100 (\$176)	\$400 (\$637)	450 (619)*

Note: Average betting figures in brackets.

* Figures to be interpreted with caution due to small sample size for probable pathological gamblers.

Table B11 – Frequency of Gambling Participation in last 12 months (%)

	All Gamblers (%)		Probable Pathological Gamblers (%)	
	2005	2008	2005	2008
Gambled less than once a week in last 12 month	30	29	0	0
Gambled at least once a week in last 12 month	70	71	100	100

**Table B12 - Age of First Regular Gambling Participation
(At Least Once a Week)**

	Probable Pathological gamblers (%)		All gamblers (%)	
	2005	2008*	2005	2008
Below 18 Years	7 [#]	18	4	3
18-24	42 [#]	71	38	36
25-29	27 [#]	12	19	30
30-39	20 [#]	0	24	23
40-49	5	0	9	7
50-59	0	0	5	2
60 and above	0	0	1	0.2

Note: Figures may not add up to 100% due to rounding off error.

* Percentages to be interpreted with caution due to small sample size for probable pathological gamblers.

Figures have been updated from the 2005 media release due to computation errors.

PROBABLE PROBLEM AND PATHOLOGICAL GAMBLING SCREENING CRITERIA

The diagnostic criteria (see Table C1) in the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV) was developed by the American Psychiatric Association (APA)¹⁰.

Table C1 – DSM-IV Diagnostic Criteria for Problem and Pathological Gambling

Preoccupation	Is preoccupied with gambling (eg. preoccupied with reliving past gambling experiences, handicapping or planning the next venture, or thinking of ways to get money with which to gamble).
Tolerance	Needs to gamble with increasing amounts of money in order to achieve the desired excitement.
Withdrawal	Is restless or irritable when attempting to cut down or stop gambling.
Escape	Gambles as a way of escaping from problems or relieving dysphoric mood (e.g. feelings of depression, guilt, anxiety or depression).
Chasing	After losing money gambling, often returns another day in order to get even ("chasing one's losses").
Lying	Lies to family members, therapists, or others to conceal the extent of involvement with gambling.
Loss of control	Has made repeated unsuccessful efforts to control, cut back, or stop gambling.
Illegal acts	Has committed illegal acts (eg. forgery, fraud, theft or embezzlement) in order to finance gambling.
Risked significant relationship	Has jeopardised or lost a significant relationship, job, or educational or career opportunity because of gambling.
Bailout	Has relied on others to provide money to relieve a desperate financial situation caused by gambling.

¹⁰ Gerstein, D. R., R. A. Volberg, M. T. Toce, H. Harwood et al. 1999. Gambling Impact and Behavior Study: Report to the National Gambling Impact Study Commission. Chicago, IL: National Opinion Research Center at the University of Chicago. Toce-Gerstein, Marianna, Dean R. Gerstein & Rachel A. Volberg. 2003. "A Hierarchy of Gambling Disorders in the General Population," *Addiction* 98: 1661-1672.