

# Effects of Outcome Expectancies on Chinese Adolescents' Gambling Intention

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**Abstract** The effect of expectancy on adolescents' intention to engage in risky behaviors has long been recognized, yet it is largely neglected in the gambling literature. Wong and Tsang (2012) recently sought to develop the Chinese Adolescent Gambling Expectancy Scale (CAGES) that could evaluate the strength of adolescents' positive and negative expectancies of gambling. Five expectancy domains for gambling were identified. The present study aimed to examine the impact of gambling outcome expectancy on Chinese adolescents' gambling intention. Survey data from 1,218 Chinese adolescents between the ages of 12 and 18 years were analyzed using regression analyses. Results showed that the five factors of gambling expectancy in a group were significant predictors of gambling intention. The model explained 18% of the variance in gambling intention. Among the five factors, social benefit was the strongest predictor of Chinese adolescents' gambling intention. The current finding has important implications for prevention measures for adolescent gambling.

**Keywords** Gambling expectancy, Gambling behavior, Gambling intention, Chinese adolescents

## Introduction

The concept of expectancy has a relatively long history. As far back as the 1930s, Tolman (1932) emphasized the cognitive nature of many motives and the importance of the goals toward which the behavior was directed. Thus, behavior was seen by Tolman to be purposive. In the process of learning that particular behaviors lead to particular goals, Tolman asserted, expectancies are established. This involves the expectancy that a particular set of behaviors will lead to a specific goal. He pointed out that goals direct our behavior and that organisms develop cognitive representations—which he termed “cognitive maps”—of their world. The brains of all organisms have evolved to record survival-oriented patterns of information (e.g.

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location of food) that may then guide subsequent behavior. Expectancy has been theorized to explain the association inherent in stimulus–response theory (Tolman, 1932).

Beginning in the 1950s, expectancy was a central tenet in expectancy–value theory (Fishbein and Ajzen 1975) that enabled cognitive psychology to better understand motivation. Expectancy–value theory assumes that, based on past experience, individuals expect a certain outcome/goal to occur as a result of a particular behavior in a given situation. This basic expectancy–value idea served as the foundation for the development of several theoretical models, including social learning theory (Rotter 1954), the theory of reasoned action (Fishbein and Ajzen 1975), and the protection motivation theory (Roger 1975).

Numerous studies in the fields of drug and alcohol use validate the importance of understanding the role of expectancies in adolescents' decisions to engage in high-risk behaviors (e.g. Aarons, Brown et al. 2001; Fromme and D'Amico 2000; Goldberg et al. 2002; Goldberg and Fischhoff 2000; Johnston 2003; Jones et al. 2001; Stacy et al. 1990). Two distinct types of expectancies—namely, positive and negative—have been empirically identified. Beliefs about the beneficial effects of alcohol have been shown to be an important predictor of adolescent alcohol consumption (Goldberg et al. 2002; Jones et al. 2001). Adolescents who see less risk of addiction to drugs are more likely to report experimentation and problems in drug use (Aarons et al. 2001; Goldberg and Fischhoff 2000). Expectancies are predictive of drug use intentions and behaviors (Boys et al. 1999). The literature suggests that expectancy has great potential as both an explanatory construct and a target for intervention.

There is growing evidence to show that early exposure to gambling may be associated with the development of problem gambling later in life, as well as participation in other problem behaviors (e.g. Felsher et al. 2004; Gupta and Derevensky 1998a, 1998b; Jacobs 2000; Kessler et al. 2008; Lynch et al. 2004; Vitaro et al. 2004; Winters et al. 2005). Thus, adolescent gambling not only carries the potential for adverse social and health consequences—including disruption of social relationships, delinquent behavior, substance use, and depression (Hardoon and Derevensky 2002; Gupta and Derevensky 2000; Wynne et al. 1996)—but also may develop into problem gambling in adulthood. Research has suggested that problem gambling rates among young people are two to four times those of adults (Blinn-Pike et al. 2007; Delfabbro et al. 2005; Dickson et al. 2002; Hardoon et al. 2004). Young people are considered a high-risk group.

However, few studies have been conducted to explore adolescents' perceptions of the consequences of gambling behaviors and how these outcome expectancies influence adolescent gambling participation. Only two published empirical studies have examined the relationships between gambling outcome expectancies and adolescent gambling in Western societies: Gillespie et al. (2007a) and Wickwire et al. (2010). Gillespie and colleagues (2007a) developed the 23-item scale to measure outcome expectancy of gambling among a student population. The scale consists of three positive expectancy scales (enjoyment/arousal, self-enhancement, money) and two negative expectancy scales (overinvolvement, emotional impact). Results further indicated that nongamblers, social gamblers, at-risk gamblers, and pathological gamblers have different outcome expectancies for gambling involvement (Gillespie et al. 2007b). The positive outcome/benefits of gambling were more salient for adolescents who gamble than those who did not. The expectancies of enjoyment/arousal proved to be the strongest predictor of problem gamblers among Canadian youth. Wickwire et al. (2010) performed another study based on a sample of African-American youth to understand adolescents' expectancy for gambling. Five expectancy domains were identified: material gain, negative affect, positive self-evaluation, negative social

consequences, and parent disapproval. Further, Wickwire and colleagues (2010) reported all five gambling expectancy factors (as a group and as individual variables) accounted for significant variance in gambling severity and frequency. Among the five domains, positive self-evaluation and negative affect were the strongest predictors of gambling severity and frequency. From a cross-cultural perspective, it would be useful to understand how adolescents in Asia perceive the outcome of gambling and how this is associated with their gambling involvement.

Recently, Wong and Tsang (2012b) developed a new measure designed to assess the expected benefit and cost of gambling among a Chinese sample. Entitled the Chinese Adolescent Gambling Expectancy Scale (CAGES), the new measure consists of five factors: relational cost, social benefit, material gain, out of control, and monetary loss. Consistent with previous research on expectancies regarding gambling among adolescents (Gillespie et al. 2007a; Wickwire et al. 2010), both positive and negative expectancies of gambling involvement were reported. Chinese adolescents perceive gambling as an opportunity to socialize with other people, especially peers (i.e. social benefit) and also as a way of making money (i.e. material gain). Conversely, adolescents anticipate the loss of relationship (i.e. relational cost) and money (i.e. monetary loss) as a result of gambling. They also perceive the potential danger of preoccupation with gambling (i.e. out of control). Among the five factors, relational cost, social benefit, and monetary loss have not been reported in other gambling expectancy instruments for adolescents developed in the West, indicating that these expected consequences of gambling may be unique to Chinese adolescents (Wong and Tsang 2012b). Relationship breakdown due to the involvement of gambling is one of the negative consequences that Chinese adolescents take into serious consideration. The risk of losing money is also particularly relevant to adolescents, as their earning ability is relatively restricted. Adolescents also perceive the benefit for social relationships as a result of gambling (Wong and Tsang 2012b). Gambling expectancies pertaining to material gain and out of control have also been identified among Western samples (Gillespie et al. 2007a; Wickwire et al. 2010).

The primary purpose of this study is to empirically investigate the predictive utility of the CAGES on Chinese adolescents' gambling intention. Results of this study are expected to further our understanding of the combined predictive power of the five factors of CAGES in a group and each of the individual factors on intention to gamble among Chinese adolescents. Because intention is assumed to be an immediate antecedent of gambling behavior and summarizes an individual's motivation to perform a given behavior (Ajzen 1991; Ajzen and Fishbein 1980), the results will provide valuable information that can be used for the identification of high-risk youths and the subsequent development and implementation of prevention and educational programs.

## Method

### Participants

A total of 1,218 students participated in this study, aged from 12 to 18 years with a mean age of 14.82 years ( $SD = 1.31$  years). There were 684 males (56.2%) and 534 females (43.8%), which was close to the norm of the secondary school student population in Hong Kong (51.4% for male and 48.7% for female; The Government of Hong Kong Administrative Region 2010). According to academic merit, primary 6 students are assigned to form 1 in one of the three bands of school, from band 1 (highest academic achievement) to band 3 (lowest

academic achievement). In this sample, 45.7% of the respondents were in band 2 schools, 28.3% were in band 3 schools, and 26% were in band 1 schools. Over half of the sample was in form 2 (50.7%), while 40.4% were in form 4, 7.1% in form 3, and 1.7% were Vocational Training Council, which provides vocational education to school dropouts ages 15 and older. In this study, school teachers chose to invite students of forms 2 and 4 as respondents. Students of other senior forms were busy preparing for public examinations, while students of form 1 were reported not ready to fill in the questionnaires.

## Measures

### *Chinese Adolescent Gambling Expectancy Scale (CAGES; Wong & Tsang 2012b)*

This 18-item, five-factor scale is an instrument to assess the expected benefit and cost of gambling among Chinese adolescents, with higher scores indicating higher endorsement of the possible consequences of gambling (Wong and Tsang 2012b). The scale consists of five factors, including relational cost, social benefit, material gain, out of control, and monetary loss. Factor 1, "relational cost," contained five items pertaining to disruption of relationship with family and friends. Factor 2, "social benefit," contained four items characterized by enhancing social relationships as a result of gambling. Factor 3, "material gain," contained three items pertaining to winning money or materials from gambling. Factor 4, "out of control," contained three items pertaining to intense preoccupation with gambling. Factor 5, "monetary loss," contained three items. Respondents were asked to rate on a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). The scale has been shown to have acceptable internal consistency ( $\alpha = 0.62\text{--}0.87$ ) and adequate construct and concurrent validities (Wong and Tsang 2012b). The five-factor model of CAGES was further examined in this study. The fit indices for the model were  $\chi^2(125, n = 1,218) = 488.94, p < .001, \chi^2/df = 3.91, CFI = .95, SRMR = .05, RMSEA = .05 (.05, .06)$ , which suggested a good fit of the model. All factor loadings were significant at the .05 level. Correlations among the five factors ranged from  $\pm.04$  to  $\pm.49$  (mean  $r = \pm.29$ ) (see Table 1).

### *Prevalence of Gambling Behavior*

Prevalence of gambling behavior in terms of lifetime and past-year gambling involvement was assessed using the Section I of the South Oaks Gambling Screen-Revised Adolescent Scale (SOGS-RA; Winters et al. 1993). A 12-item South Oaks Gambling Screen-Revised Adolescent scale is used to address the issues of frequency and severity, and the type of gambling behaviors. Based on the adult version of the South Oaks Gambling Screen (SOGS), the wording of the SOGS-RA was altered to be more appropriate for young people. This scale has been used extensively to measure gambling behaviors in adolescents (Gupta and Derevensky 1998). Reliability of the SOG-RA in terms of alpha coefficient was reported to be 0.8 (Winters et al. 1993). The scale of SOGS has also been used in the Chinese samples (Oei et al. 2007a).

Section I of the SOGS-RA allows individuals to rate their gambling behaviors in their lifetime as "Never" or "At least once" and, during the past 12 months, as "Never," "Less than monthly," "Monthly," "Weekly," and "Daily" across different gambling activities. In the present study, participants who never gambled in their lives were coded as 0, while participants who reported having gambling at least once in their life were coded as 1. The same coding was applied to gambling within the past year. Participants who had not gambled within the past year were coded as 0, while other levels of involvement were coded as 1. Having gambling at least once in their lives or within the past year served as a measure

**Table 1** Results of confirmatory factor analysis of CAGES ( $n = 1,218$ )

Construct and items	Standardized factory loading
Factor 1 Relational Cost	
Gambling would make me lose friends.	0.72
Gambling would affect my performance in school or work.	0.75
Gambling would make my friends distance me.	0.81
Gambling would damage my family's relationship.	0.76
Gambling would implicate my family.	0.69
Factor 2 Social Benefit	
Gambling would help me maintain friendships.	0.69
Gambling would make me join in groups.	0.8
Gambling would make friends accept me.	0.79
Gambling would make me stay with friends.	0.73
Factor 3 Material Gain	
I can buy what I like with the money I gained from gambling.	0.58
I can earn "fast money" from gambling.	0.75
I can get money from gambling without involving jobs.	0.74
Factor 4 Out of Control	
The more I gamble, the more I get involved in it.	0.59
Gambling would make me get hooked.	0.55
Once I start gambling, I would continue to gamble.	0.69
Factor 5 Money Loss	
Gambling would make me lose all my money.	0.63
Gambling would make me waste all my money.	0.57
Gambling would make me lose money.	0.68

$\chi^2 = 488.94$ ,  $df = 3.91$  ( $p < .001$ ), CFI = .95, SRMR = .05, RMSEA = .05

of gambling prevalence. Further, the computed average score of past year gambling across the 10 local gambling activities served as a measure of gambling frequency.

### *Gambling Intention Scale (GIS)*

Based on Section I of SOGS-RA (Winters et al. 1993), respondents are asked to indicate which of 10 popular local gambling activities—football betting, horse racing, Mark Six, sports betting, card, mahjong, casino games, Internet gambling, dice, and gambling with family/friends—that they would like to try over the next two weeks. The types of gambling activities used in this study were adopted by the previous local prevalence studies (The Government of the Hong Kong Special Administrative Region 2001, 2005, 2011) where 10 popular gambling activities have been identified. The internal consistency of this scale was 0.92 in the present sample.

### *Sociodemographic Data*

Sociodemographic data were obtained, including age, sex, school form, academic performance, and so on. Respondents were invited to provide their actual age, measured in years. Also, subjective measure of respondents' academic performance was included. They were asked to self-rate their overall academic scores on a 5-point scale, ranging from 1 (very good) to 5 (very poor). Information of parental gambling history was collected through the SOGS-RA, as one of the questions relates to parents' status of gambling.

**Table 2** Lifetime and past-year prevalence of gambling behaviors

Prevalence of gambling behaviors	Total $n = 1,218$	
	$n$	%
Lifetime	865	71.25
Past year	525	43.10

Respondents were invited to indicate “yes,” “no,” or “I don’t know” as to whether they think that their parents gamble too much.

### Procedure

Ethical approval to conduct this study was given by the ethics review committee of The University of Hong Kong. The present study collected its data from local secondary schools. A representative sample of local secondary schools was selected. The researcher downloaded a list of local secondary schools that was compiled and issued by the Education Bureau (The Government of the Hong Kong Special Administrative Region 2009). Stratified cluster sampling was adopted, with district areas (Kowloon, Hong Kong Island, New Territories East, and New Territories West), school bands (high, medium, and low in student academic achievement), and form level (junior and senior form of students) as stratifying factors.

There were 1,281 questionnaires sent to 10 local secondary schools and 1 vocational training center. Each principal or responsible teacher received an invitation letter stating clearly the principal aim of the study, the selection criteria for respondents, the anonymous and voluntary nature of the study, and the standardized procedure for administering the study. Each school was invited to nominate two or three classes from both junior (forms 1–3) and senior (forms 4–6) form to take part in the survey. Students were informed that they could discontinue at any time, and that all their responses were confidential. The questionnaire was group administrated to students in the classroom by teachers. A total of 1,281 questionnaires were distributed and 1,218 were completed, giving a response rate of 95.1%.

### Results

#### Prevalence of Gambling Behavior

Among the 1,218 participants, 71.25% ( $n = 865$ ) reported having gambled at least once in their life (i.e. lifetime), while 43.10% ( $n = 525$ ) reported having gambled at least once within the past year (i.e. past year) (see Table 2). The frequency of gambling within the past year was 1.18 in average ( $SD = .36$ ), which means that participants generally gambled less than once a month within the past year.

#### Group Differences of Gambling Behaviors

##### *Gender*

Table 3 shows the significant gender differences with respect to gambling intention and gambling behaviors. A t-test revealed that males ( $M = 1.68$ ) had a significantly higher

**Table 3** Gender and gambling variables

Gender	Gambling variables			
	Mean intention***	Lifetime <sup>a</sup>	Past year <sup>b</sup>	Past year average score <sup>c****</sup>
Male	1.68 (0.81)	73.31%	45.18%	1.21 (0.43)
Female	1.50 (0.67)	68.61%	40.45%	1.14 (0.24)

<sup>a</sup> Reported having gambled at least once in their life

<sup>b</sup> Reported having gambled at least once within the past year

<sup>c</sup> Reported average scores of past-year gambling

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

intention compared to female counterparts ( $M = 1.50$ ),  $t(1,210) = 4.23$ ,  $p < .001$ ). Further, males ( $M = 1.21$ ) had a significantly higher average score of past year gambling than did females ( $M = 1.14$ ),  $t(1,110) = 4.00$ ,  $p < .001$ ).

### Age

Correlation between gambling intention and gambling behaviors with age was computed (Table 4). Pearson's  $r$  revealed a positive correlation between the two variables,  $r(1,218) = .06$ ,  $p < .05$ , indicating that as age increases, gambling intention also increases. Pearson's correlation was then computed to assess the relationship between age and average scores of past year gambling. The results showed a positive correlation between the two variables,  $r(1,218) = .09$ ,  $p < .01$ , indicating that as age increases, the average gambling frequency within the past year also increases. A Spearman's correlation was computed between age and lifetime prevalence. The result showed that there was a positive correlation between the two variables,  $r(1,218) = .10$ ,  $p < .01$ . Older adolescents tended to have a higher rate of lifetime prevalence. A Spearman's correlation was also computed between age and past-year prevalence. The result showed that there was a positive correlation between the two variables,  $r(1,218) = .08$ ,  $p = .05$ . Older adolescents tended to have higher rate of past year prevalence. However, each of these positive correlations was very small.

### Parental History of Gambling

Among the 1,218 participants, about 54% ( $n = 661$ ) indicated that their parents have participated in gambling. Table 5 indicates significant differences in parental history of gambling with respect to gambling intention and gambling behaviors. Chi-square analyses revealed that adolescents whose parents had a history of gambling were more likely to report lifetime and past year prevalence than were adolescents whose parents had no history of gambling,  $\chi^2(1, n = 1,189) = 22.03$ ,  $p < .001$  and  $\chi^2(1, n = 1,193) = 5.91$ ,  $p < .05$ , respectively. Further, t-tests revealed that adolescents whose parents had a history of gambling scored significantly higher on the average score of past-year gambling than did adolescents whose parents had no history of gambling,  $t(1,188) = -2.83$ ,  $p < .05$ .

### Academic Performance

Among the participants, around 58% of students rated their academic performance as "average," around 24% as "above average," and 18% as "below average." Table 6 identifies significant differences in academic performance with respect to gambling intention

**Table 4** Correlation between age and gambling variables

	Intention	Lifetime <sup>a</sup>	Past year <sup>b</sup>	Past year average score <sup>c</sup>
Age	.06*	.10**	.08*	.09**

<sup>a</sup> Reported having gambled at least once in their lives

<sup>b</sup> Reported having gambled at least once within the past year

<sup>c</sup> Reported average scores of past-year gambling

\*  $p < .05$ , \*\*  $p < .01$  (two-tailed test)

and gambling behaviors. A significant difference in gambling intention score was found in the one-way analysis of variance (ANOVA),  $F(2, 1211) = 4.79, p < .01$  among the three academic performance groups. Posthoc comparisons with Bonferroni correction indicated that the below average group ( $M = 1.73, SD = .80$ ) scored significantly higher on gambling intention than the above average group ( $M = 1.52, SD = .78$ ),  $p < .01$ . No significant differences in relation to lifetime prevalence, past year prevalence, and average scores of past-year gambling were found between the different academic performance groups.

Correlation Analyses

Descriptive statistics—such as means and standard deviations, reliability coefficients, and bivariate correlations of the five factors of CAGES and gambling intention—are summarized in Table 7. Correlation analysis revealed that the association among the five factors of gambling expectancy and gambling intention were in an expected direction. Participants' intention to gamble was significantly and positively correlated with the SB, MG, and OC factors of gambling expectancy; while negatively correlated with the RC and ML factors of gambling expectancy.

Regression Analysis

Hierarchical multiple regression was employed to test whether the gambling expectancy factors can predict respondents' gambling intention. In the regression model, age, gender, and academic performance were put into the first block as control variables. The five gambling expectancy factors were entered into the second block, assessed for predictive power as a group and as individual variables.

The five factors of gambling expectancy in a group were significant predictors of gambling intention over a 2-week period,  $\Delta R^2 = .15, F(5, 1182) = 42.86, p < .001$ , with SB

**Table 5** Parental history of gambling and gambling variables

Parental gambling	Gambling variables			
	Mean intention	Lifetime <sup>a***</sup>	Past year <sup>b*</sup>	Past year average score <sup>c*</sup>
Yes	1.62 (0.79)	76.52%	46.29%	1.20 (0.38)
No	1.57 (0.72)	64.08%	40.23%	1.15 (0.32)

<sup>a</sup> Reported having gambled at least once in their lives

<sup>b</sup> Reported having gambled at least once within the past year

<sup>c</sup> Reported average scores of past-year gambling

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$



**Table 6** Academic performance and gambling variables

Academic performance	Gambling variables			
	Mean intention**	Lifetime <sup>a</sup>	Past year <sup>b</sup>	Past year average score <sup>c</sup>
Above average	1.52 (0.78)	70.17%	40.68%	1.17 (0.37)
Average	1.60 (0.73)	70.47%	42.13%	1.17 (0.34)
Below average	1.73 (0.80)	75.12%	49.31%	1.22 (0.42)

<sup>a</sup> Reported having gambled at least once in their lives

<sup>b</sup> Reported having gambled at least once within the past year

<sup>c</sup> Reported average scores of past-year gambling

\*  $p < .05$ , \*\*  $p \leq .01$ , \*\*\*  $p \leq .001$

and OC as the significant, positive predictors:  $\beta = 0.31$ ,  $t(1,182) = 9.77$ ,  $p < .001$  and  $\beta = 0.09$ ,  $t(1,182) = 2.73$ ,  $p < .01$ , respectively; RC and ML as the significant, negative predictors:  $\beta = -0.08$ ,  $t(1,182) = -2.63$ ,  $p < .01$  and  $\beta = -0.07$ ,  $t(1,182) = -2.10$ ,  $p < .05$ , respectively. The regression results for the final model are summarized in Table 8.

In general, the five-factor model of gambling expectancy showed significant increase in the prediction of gambling intention, while the five individual factors showed four significant associations with the dependent variable.

## Discussion

In this study, males reported significantly higher intention to gamble and higher frequency of past-year gambling than did females. The present data confirmed the findings of many studies that gambling is more common among male adolescents than among female adolescents (e.g. Delfabbro et al. 2005; Hardoon et al. 2004; King et al. 2010; St-Pierre et al. 2014; Yip et al. 2011). Parental history of gambling was found to have a significant connection with gambling behavior (i.e. lifetime prevalence). Adolescents who gamble are more likely to report having parents who are also involved in gambling. These findings are consistent with the large number of studies (e.g. Magoon and Ingersoll 2006; Splevins et al. 2010; Vachon et al. 2004; Wickwire et al. 2007a), suggesting that familial factors are thought to contribute to initiation and development of gambling behavior. Adolescents whose academic performance is below average are also found to report higher gambling

**Table 7** Descriptive statistics, reliability coefficients, and correlations among variables used ( $n = 1,218$ )

Variable	<i>M</i>	<i>SD</i>	$\alpha$	1	2	3	4	5	6
1. RC	4.37	1.65	.86	–					
2. SB	2.52	1.21	.83	-.21***	–				
3. MG	3.79	1.27	.72	.20***	.37***	–			
4. OC	3.16	1.48	.63	.14***	.33***	.41***	–		
5. ML	4.73	1.39	.66	.38***	-.04	.30***	.49***	–	
6. GI 2-week	1.60	0.76	.92	-.15***	.38***	.17***	.18***	-.07*	–

Note. Dashes indicate that each variable correlates perfectly with itself.

RC = Relational Cost; SB = Social Benefit; MG = Material Gain; OC = Out of Control; ML = Monetary Loss; GI = Gambling Intention

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

**Table 8** Summary of multiple regression results for predicting gambling intention ( $n = 1,203$ )

Variable	<i>B</i>	<i>SE</i>	$\beta$	$R^2$
Intercept	1.27	0.26		.18***
Age	0.01	0.02	-0.02	
Sex	-0.10	0.04	-0.06*	
AP	0.11	0.03	0.10***	
RC	-0.04	0.01	-0.08**	
SB	0.20	0.02	0.31***	
MG	0.03	0.02	0.05	
OC	0.05	0.02	0.09**	
ML	-0.04	0.02	-0.07*	

AP = Academic Performance; RC = Relational Cost; SB = Social Benefit; MG = Material Gain; OC = Out of Control; ML = Monetary Loss.

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

intention. This finding is in line with previous studies showing that adolescent gamblers have decreased academic performance and lower grades (e.g. Floros et al. 2013; Olason et al. 2006; Stinchfield 2004; Wynne et al. 1996; Yip et al. 2011), suggesting that gambling is an indicator of academic performance in different cultures.

The results from this study support the utility of gambling expectancy in explaining gambling intention among Chinese adolescents. Specifically, analysis revealed that the model accounted for 18% of the variance in near-future intention (subsequent 2 weeks). The findings showed higher levels of perceived benefit in social relationship and out of control; lower levels of perceived risk in relational cost and monetary loss would promote gambling intention.

Consistent with previous literature examining the effect of expectancy on adolescents' intention to engage in risky behaviors (e.g. drug use and alcohol consumption) (Earleywine 1995; Skenderian et al. 2008), the results of this study also indicate that gambling expectancy was a significant predictor of gambling intention. In this study, expectancy concerning out of control was positively associated with gambling intention. Theoretically, being out of control was regarded as a negative consequence of gambling (Bergh and Kühlnhorn 1994; Productivity Commission 1999). However, somewhat counterintuitively, adolescents who expected gambling would get them hooked were also more likely to engage in gambling. This mirrors a similar finding from the Gillespie et al. study (2007b) that adolescents who were problem gamblers anticipated losing control significantly more than did social gamblers. Perhaps adolescents with high intention to gamble are more aware of this negative consequence, as they are currently experiencing the risk of intense preoccupation.

Among the five factors, social benefit was the strongest predictor of gambling intention, while relational cost also showed significant association with gambling intention. Our results look inconsistent with the existing literature, which show that positive self-evaluation and negative affect were the strongest predictors among African-American youth (Wickwire et al. 2010), while expectancies of enjoyment/arousal proved to be the strongest predictor among Canadian youth (Gillespie et al. 2007b). Evidently, Chinese adolescents place heavy emphasis on the perceived benefit and cost of social relationship when considering their intention to gamble. Thus, relationship enhancement and disruption as a result of gambling are particularly important in Chinese adolescents' decision to gamble. Gabb (2001)

commented that Western gambling is explored with reference to individualism, autonomy, and personal responsibility, while gambling in collectivist value systems is discussed in the context of social relationships. As the first study on gambling to examine the effect of anticipated risk and benefit for social relationships on gambling intention, the current finding has important implications for educational programs, especially in preventing early-onset adolescent engagement in gambling. In particular, the prevention initiatives for Chinese adolescents should aim to emphasize the role of “relationship” as the risk and protective factor.

Limitations should be noted when interpreting the findings of this study. First, the cross-sectional design of this study, as with other studies on the subject, was not ideal for discerning causal relationships among the variables. Therefore, future studies with a longitudinal design should aim to clarify the temporal relationships between the predictors and gambling intention. Second, the sample was comprised mostly of forms 2 and 4 students; however, the extent to which they represent the adolescent population is uncertain. Third, Internet gambling as a way of placing bets should be excluded from the choice of gambling activities to avoid confusion. Fourth, the study was based on self-report data, and the findings might be influenced by social desirability biases. Nonetheless, the principle of confidentiality and anonymity of collected data were highlighted before survey administration.

As gambling has become more socially accepted and accessible, adolescent gambling is of increasing public concern. A wide range of negative consequences are associated with early onset of gambling among adolescents, including the development of problem gambling in later life (Felsher et al. 2004; Jacobs 2000; Lynch et al. 2004; Vitaro et al. 2004; Winters et al. 2005). The present study empirically examined the impact of gambling outcome expectancy on Chinese adolescents' gambling intention. The finding showed that underage gambling is not uncommon among Chinese adolescents. It is noteworthy that adolescents' perceptions of the consequences of gambling involvement play a critical role in their decision to gamble. The anticipated social benefit and disruption as a result of gambling are salient correlates of gambling intention with significant potential for research and practice.

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