

# Understanding Adolescent Gambling Using an Extended Model of the Theory of Planned Behaviour (TPB)

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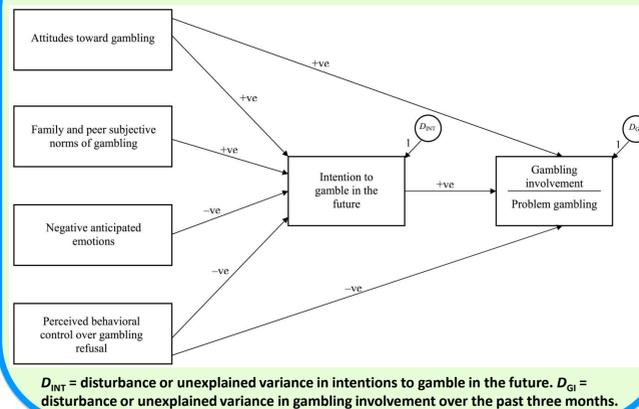
## Introduction

- Several predictors and correlates of adolescent gambling and problem gambling behaviour have been identified in the literature, but few studies take into account the possible connections among predictors (Lee, 2013).
- TPB has attracted increasing research attention for describing gambling and problem gambling behaviour.
- Previous cross-sectional research has established significant relationships between TPB constructs and *young adult* gambling and/or problem gambling behaviour (Martin et al., 2010, 2011; Wu & Tang, 2012).
- One criticism of the TPB is its failure to take into account emotional processes.
- Negative anticipated emotions (NAE) (e.g., regret, guilt) are shown to contribute to gambling decision-making and gambling intentions (Li et al., 2010; Zeelenberg & Pieters, 2004).
- It remains unclear whether the TPB model and NAE would be useful in explaining adolescent gambling and/or problem gambling behaviour.

## Research Objectives

- The current study examines the value of an extended TPB model for explaining adolescent gambling.
- Specifically, the research sought to ascertain whether:
  - TPB constructs (attitudes, subjective norms, PBC) are associated with gambling involvement (past 3 months) and problem gambling (past year) among adolescents
  - NAE are also associated with gambling involvement and problem gambling among adolescents
  - gambling intentions mediate certain of these relationships

## Hypotheses



$D_{Int}$  = disturbance or unexplained variance in intentions to gamble in the future.  $D_{GI}$  = disturbance or unexplained variance in gambling involvement over the past three months.

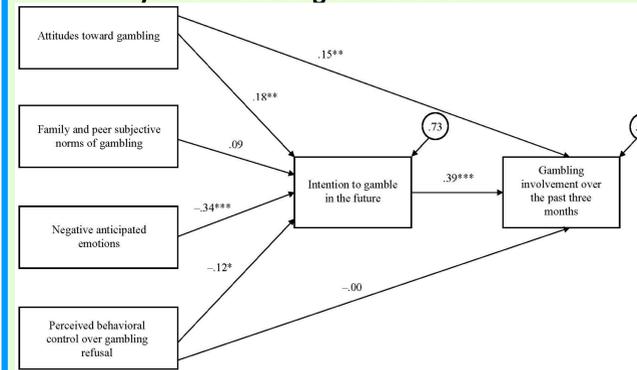
## Methods

- A sample of 432 Québec high school students (239 males; 191 females; 2 unreported gender) aged 14 – 18 years ( $M = 15.64$  years,  $SD = .96$ ) were surveyed.
- Survey consisted of previously validated scales:
  - Gambling Attitudes Scale** (Moore & Ohtsuka, 1997, 1999): Cronbach's  $\alpha = .83$
  - Gambling Injunctive Norms Scale** (Moore & Ohtsuka, 1997, 1999): Cronbach's  $\alpha = .90$
  - Perceived Control over Gambling Refusal Scale** (Wu & Tang, 2011): Cronbach's  $\alpha = .92$
  - Gambling Intention Scale** (Moore & Ohtsuka, 1997): Cronbach's  $\alpha = .84$
  - Canadian Adolescent Gambling Inventory** (Tremblay et al., 2010): participants endorsing gambling on 1+ activities classified as "gamblers"
  - DSM-IV-MR-J** (Fisher, 2000): scores (0 or 1) summed across instrument's nine categories to form continuous measure of problem gambling; Cronbach's  $\alpha = .75$
- Survey also included a 4-item scale adapted from previous research (Caron et al. 2004; Conner et al., 2006) to measure negative anticipatory emotions related to gambling.
  - ✓ Cronbach's  $\alpha = .87$
  - ✓ Test-retest reliability: ICC (3, 132) = .72, 95% CI [.61, .80]
- Path analyses were performed to evaluate direct and indirect effects of NAE and the TPB components on gambling intentions, gambling involvement, and gambling problems.

## Results

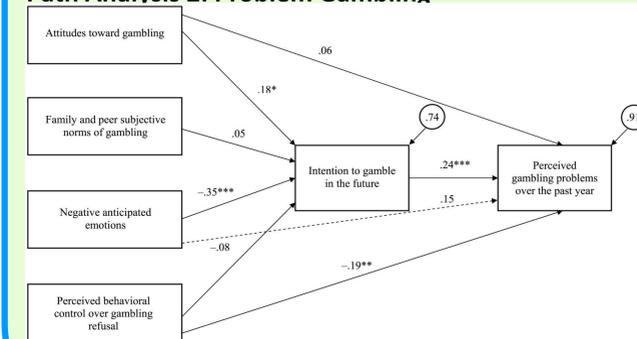
- 50% of participants reported gambling in the past three months ( $n = 202$ ), with 82.2% of gamblers that endorsed none of the behaviours associated with problem gambling (DSM-IV-MR-J score = 0).
- Goodness-of-fit of the extended TPB model on gambling involvement was satisfactory:
  - ✓ Satorra-Bentler scaled  $\chi^2$  (2,  $N = 432$ ) = .59;  $p = .74$
  - ✓ CFI = 1.00; RMSEA = .00, 90% CI [.00, .07]; SRMR = .01
- However, goodness-of-fit of the extended TPB model on problem gambling was poor.
- A competing model, adding a direct effect of negative anticipated emotions on problem gambling, was evaluated
- Goodness-of-fit of the competing model was found to be satisfactory:
  - ✓ Satorra-Bentler scaled  $\chi^2$  (2,  $N = 202$ ) = .25;  $p = .62$
  - ✓ CFI = 1.00; RMSEA = .00, 90% CI [.00, .01]; SRMR = .01

### Path Analysis 1: Gambling Involvement



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

### Path Analysis 2: Problem Gambling



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

## Conclusions

- Consistent with empirical literature on the TPB in young adult gambling, the results suggest that:
  - NAE, attitudes, and PBC over refusal to gamble influence gambling intentions;
  - gambling intentions and attitudes have a direct relationship with gambling involvement
  - gambling intentions and PBC over refusal to gamble are directly related to problem gambling behaviours.
- Subjective norms were not found to be associated with gambling intentions.
  - ✓ Plausible that inclusion of both family and friends as referents in the estimation subjective norms may have weakened its relationship with gambling intentions (Neighbors et al., 2007).
- PBC was not observed to have a direct effect on gambling involvement.
  - ✓ Possible that adolescents in this sample overestimate their ability to resist gambling (Moore & Ohtsuka, 1999).
- Attitudes were not found to have a direct effect on problem gambling.
  - ✓ Martin et al. (2011) observed that attitudes only had a direct influence on gambling frequency for problem gamblers and not for non-problem gamblers.
  - ✓ Possible that attitudes did not have a direct impact on problem gambling behaviours as the majority of adolescents in this sample did not endorse any behaviours associated with problem gambling.
- The findings support the utility of an extended TPB framework for understanding adolescent gambling behaviour.
- The findings also suggest that adolescent problem gambling prevention and intervention efforts should consider targeting NAE and the TPB components in order to postpone initiation to gambling (a risk factor for problem gambling) and promote responsible gambling decision-making.

## This research was supported by:

Social Sciences and Humanities Research Council

Fonds de recherche  
Société et culture  
Québec