



# Is the Gambling Motives Questionnaire really three-dimensional? A proposition of a four-dimensional Gambling Motives Questionnaire – Revised



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## HIGHLIGHTS

- Factor analyses showed that the GMQ was better represented as a 4-factor structure.
- The new fourth motivational factor was labeled self-gratification.
- Self-gratification and coping motives were associated with loss of control.
- Self-gratification was associated with gambling problems.
- The GMQ-R seems to be a reliable and valid instrument.

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## ABSTRACT

The aim of the present study was to improve the weaknesses of the three-dimensional Gambling Motives Questionnaire and to examine the psychometric properties and factor structure of the Gambling Motives Questionnaire-Revised. The Gambling Motives Questionnaire was administered to a sample of 418 gamblers (92% men, mean age 19.5 years). Participants completed the Gambling Motives Questionnaire and an additional item tapping boredom, as well as a variety of measures of gambling behavior and gambling problems as criterion measures. Results showed that the Gambling Motives Questionnaire-Revised is better represented as a four-factor structure tapping the following four gambling motives factors; enhancement, coping, social, and self-gratification,  $\Delta\chi^2 \Delta(df) = 24.76 (3), p < 0.001$ . Removing two problematic items from the Gambling Motives Questionnaire and adding an extra item tapping boredom also improved the fit of the Gambling Motives Questionnaire-Revised. The subscales enhancement, social, and coping were all significant predictors of variety of gambling behaviors ( $p < 0.05$ ), whereas enhancement, coping, and self-gratification predicted frequency of gambling behaviors ( $p < 0.01$ ). Coping and self-gratification predicted loss of control ( $p < 0.01$ ), whereas self-gratification predicted gambling problems ( $p < 0.001$ ). The Gambling Motives Questionnaire – Revised, consisting of the four dimensions enhancement motives, social motives, coping motives and self-gratification motives, is a reliable and valid instrument to measuring gambling motives.

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**Abbreviations:** GMQ, Gambling Motives Questionnaire; GMQ-R, Gambling Motives Questionnaire – Revised; ENH, Enhancement motives; SOC, Social motives; COP, Coping motives; GRAT, Self-gratification motives; PGSI, Problem Gambling Severity Index; RMSEA, Root-Mean-Square of Error Approximation; CFI, Comparative Fit Index; TLI, Tucker Lewis Index.

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## 1. Introduction

The Gambling Motives Questionnaire (GMQ) is a self-report measure of gambling motives (Stewart & Zack, 2008), and was adapted from a three-dimensional measure of drinking motives – The Drinking Motives Questionnaire (Cooper et al., 1992) which identifies three specific types of motivation: (1) coping motivation (COP) – referring to internal negative reinforcement (e.g. the reduction/avoidance of negative emotions), (2) enhancement motivation (ENH) – referring to internal, positive reinforcement (e.g. increase in positive emotions), and (3) social motivation (SOC) – referring to external, positive reinforcement motives (e.g. to increase social affiliation) (Cooper et al., 1992; Stewart & Zack, 2008). Each subscale consists of five items where the

respondents indicate how often they gamble (response categories: almost never/never, sometimes, often, and almost always) for each reason.

The three types of motivation have been associated with different patterns of drinking and gambling behavior. Previous literature found that enhancement and coping motivation independently predicted drinking problems and gambling problems, respectively (Cooper et al., 1992; Stewart & Zack, 2008), suggesting an association between emotion-regulation motives and problem drinking or gambling. Both COP and ENH motivation (particularly ENH) are associated with heavier drinking and alcohol problems, but ENH was suggested to be indirectly related to alcohol problems, because it is related to heavier drinking/more consumption level. COP is however related to alcohol problems after controlling for consumption (Cooper et al., 1992).

Different mean profiles across the subscales have been found between problem and non-problem gamblers, where problem gamblers scored highest on ENH and lowest on SOC, whereas non-problem gamblers scored highest on SOC and lowest on COP. ENH have been found to predict greater gambling behavior, whereas both COP and ENH predicted more severe gambling problems. Furthermore, COP has been found to predict gambling problem more strongly among women, whereas ENH predicted gambling problems more strongly among men (Stewart & Zack, 2008). Hence, the identification of motives for gambling may be important in order to understand what differentiates problem gamblers from non-problem gamblers, which may have implications for developing effective preventions and interventions. The GMQ have been suggested to be helpful in functional analysis when establishing why a patient gambles, thereby facilitating targeted treatment interventions that optimize therapeutic outcomes (Stewart & Zack, 2008).

Although the GMQ seems to be a promising instrument for measuring self-reported gambling motives, the instrument also has some weaknesses that we believe can be ameliorated. The authors themselves noted that the derivation of items from a three-dimensional model for drinking motives is a possible limitation and do not ensure inclusiveness of all possible gambling motives (Stewart & Zack, 2008). We propose to add a fourth factor labeled “self-gratification”, and in the following we will outline some of the weaknesses of the GMQ and propose suggestions for improving the scale which we subsequently will test statistically.

Firstly, the SOC factor displayed two items (1 and 10) with somewhat weaker loadings (0.540 for both items), and we question the social nature of these items. Item 1 (“As a way to celebrate”) do not necessarily imply a social dimension, as many gamblers may celebrate something by rewarding themselves with gambling which may be completely solitary not involving socializing with others. Furthermore, item 10 (“Because it is something I do on special occasions”) does neither necessarily imply a social dimension. Hence, we suspect these items to measure something else than being sociable, and argue for including a fourth dimension, called “self-gratification” because these items measure that people gratify themselves.

Secondly, the COP factor had two items showing weak and complex loadings. Item 2 (“To relax”) had a loading of 0.386 on COP, but loaded even more strongly on ENH (0.447). Conceptually it makes sense that “gambling to relax” could belong to either the ENH or the COP factor. Relaxation will usually lead to an increase in positive emotions, which is the core definition of the ENH factor, but it may also reduce negative emotions like stress and tension, which is central in the COP dimension. Consequently, in our subsequent analyses we will test for the possibility that item 2 (“To relax”) belongs to either the ENH or the COP factor. Item 8 (“Because you feel more sure of yourself”) also loaded weakly on the COP factor originally (0.323) and showed a salient factor loading of 0.320 on the SOC factor as well. We argue that item 8 may rather belong to the proposed new factor “self-gratification”, as gambling in order to feel more self-confident may be seen as a way of gratifying yourself.

Thirdly, the ENH factor does not appear to be conceptually coherent. Items 3 (“Because you like the feeling”), 6 (“Because it’s exciting”) and 12 (“Because it is fun”) all refer to the pleasurable experience of the gambling activity in itself. But items 9 (“To get a ‘high’ feeling”) and 15 (“Because it makes you feel good”) differ somewhat conceptually from the other items in this factor. These items do not refer to characteristic of the gambling per se, but rather to positive feelings that the gambling activity may induce – which may be rather be related to self-gratification. Moreover, these items portrayed the lowest factor loadings (0.743 and 0.754, for item 9 and 15, respectively) compared to the other items in this factor (0.831, 0.923, and 0.868). We propose that item 9 belongs to the new factor “self-gratification”. “Self-gratification” is defined as “the indulgence or satisfaction of one’s own desires” (Oxford Dictionary, 2016), hence “To get a ‘high’ feeling” seems to have high face-validity with the self-gratification factor. Item 15 is problematic because it lacks precision, and one may argue that this item belongs to the self-gratification, coping as well as the enhancement factor. Consequently, we argue for removing this item from the scale because this item is too generalistic and not significantly different from item 3 (“Because you like the feeling”), 6 (“Because it is exciting”) and 12 (“Because it is fun”).

Fourthly, boredom has been found to be a significant predictor of gambling problems (Myrseth et al., 2016) and gambling to relieve boredom has been suggested as one of the primary motivations for engaging in gambling activities (Brown & Coventry, 1997; Gupta & Derevensky, 1998). We therefore suggest to include a new item “Because you are bored”. As gambling to relieve boredom involves the reduction/avoidance of negative emotions (internal negative reinforcement) we consequently expect this item to belong to the COP factor.

Stewart and Zack (Stewart & Zack, 2008) also tested the GMQ in a sample of primarily pathological gamblers (80% were classified as probable pathological gamblers). Because most people who engage in gambling are not pathological gamblers, we wanted to test the usefulness of the questionnaire in a sample of gamblers, who are not necessarily pathological gamblers.

### 1.1. Aim of the study

The aim of the present study was to improve the abovementioned weaknesses of the GMQ and to test whether the GMQ is better represented as a 4 factor structure, where items 1, 8, 9 and 10 make up the fourth factor “self gratification” (GRAT). Secondly we want to test whether removing the problematic items 2 and 15 will improve the instrument. Thirdly we want to test whether adding an extra item tapping boredom, will improve the fit of the GMQ-revised.

## 2. Method

### 2.1. Participants

The study sample represented a convenience sample of 1018 conscripts recruited from the pool of conscripts who started their first year military service in Norway between August 2013 and August 2015. All participants included in the present study had participated in some form of gambling during the last year. The final sample ( $N = 418$ ) consisted of 386 men and 32 women, with a mean age of 19.5 years ( $SD = 0.9$ ). Because conscripts are predominantly young males and gambling is more prevalent among young males compared to other segments of the population, one may expect conscripts to display more gambling problems compared to a representative sample. The gambling behavior in present sample was therefore compared to a national representative sample of 15–24 year olds (Pallesen et al., 2014). According to the Canadian Problem Gambling Severity Index, 1.0% ( $n = 4$ ) of the conscripts was classified as a problem gambler, which was similar to the percentage reported from the Norwegian representative sample (0.8%). However, a larger proportion of the

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