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Original article

Positive alcohol expectancies in the French context: factorial properties of data from a large sample of alcohol drinkers

Attentes positives associées à l'alcool dans le contexte français : propriétés factorielles des données d'un grand groupe des buveurs d'alcool

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Abstract

A French adaptation of the Alcohol Expectancy Questionnaire was able to provide data with hierarchical properties predicted from Goldman et al. (Psychol. Assess. 9 (1997) 145) study. The hierarchical structure was replicated using parcelled data from a sample of 1006 adult French drinkers, mean age = 22. Using criteria of stochastic homogeneity and geometrical consistency to select the measurement variables led to a 16-item solution. As Goldman et al.'s results suggested, the general factor could be replaced by factor Arousal/Power, with an acceptable goodness-of-fit, $\chi^2(101, N = 1006) = 203.8$. A MIMIC model suggested that the factor Arousal/Power was positively associated with a dichotomous measure of drinking habit, $d = 0.83$.

Résumé

Une adaptation française du Alcohol Expectancy Questionnaire a fourni des données dont les propriétés factorielles ont pu être prédites. La structure hiérarchique des attentes positives vis-à-vis de l'alcool, proposée par Goldman et al. (1997), a été répliquée sur des données issues d'un échantillon de 1006 consommateurs d'alcool français d'âge moyen = 22 ans. En basant la sélection des variables mesurées sur les principes d'homogénéité stochastique des distributions et de cohérence géométrique dans l'espace factoriel, 16 items ont été retenus au lieu d'une approche basée sur l'agrégation des variables. Ainsi que les résultats de Goldman et al. le suggéraient, le facteur général a pu être remplacé par le facteur Arousal–Power avec une qualité d'ajustement acceptable, $\chi^2(101, n = 1006) = 203{,}8$. Le facteur Arousal–Power était associé avec une mesure binaire de consommation d'alcool, $d = 0{,}83$.

Keywords: Alcohol expectancies; Hierarchical factor analysis; MIMIC modelling; Reliability

Mots clés : Attentes vis-à-vis de l'alcool ; Analyse factorielle hiérarchique ; Modèle structural MIMIC ; Fiabilité

1. Introduction

Assuming that "the decision to initiate a drinking episode [. . .] is driven at least partly by the individual's belief that alcohol will serve certain functions or result in certain desirable consequences, such as relief from tension or enhancement of mood" (Leigh, 1989b), the issue of measurement of such beliefs in drinkers arises. In other words, assessing how much positive alcohol expectancies are related to drinking behaviours requires establishing that positive alcohol expectancies are measurable constructs. This issue has not been without substantial and methodological controversy (Goldman et al., 1991; Leigh,

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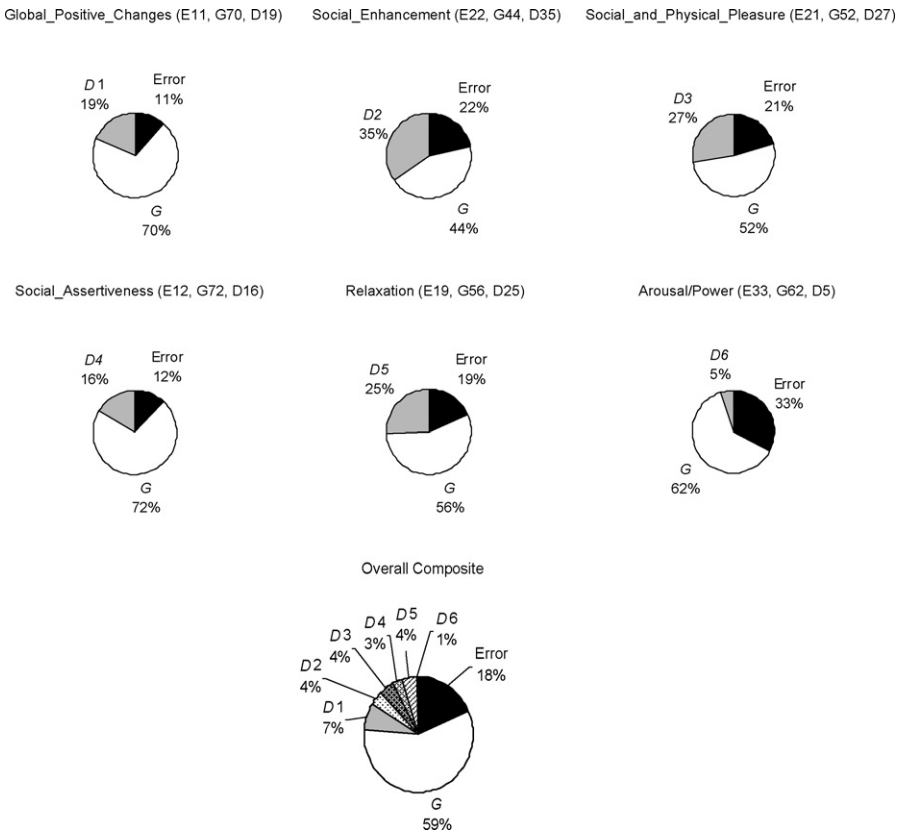

Fig. 1. Reliability analyses related to Goldman et al.'s, (1997, Fig. 2) standardised model.

1989a; Leigh, 1989b; Leigh and Stacy, 1991; Leigh and Stacy, 1993). In the present paper, we are specifically interested in discussing and replicating the factorial properties of data from the Alcohol Expectancy Questionnaire (AEQ; Brown et al., 1987; Brown et al., 1980) adapted to the French culture.

Briefly, when fitting a factorial model to a data set, one is interested in accounting for the observed covariance structure from the data by estimating a more parsimonious, latent covariance structure. The parameters, which specify the latent covariance structure, are estimated but the structure of the equations is derived from hypothetical latent variables. The latent variables are (often times implicitly) thought of as effects of individual variability along some separable and meaningful dimensions or constructs (Borsboom et al., 2003).

Confirmatory factor analysis is a means for checking that the observed covariances may be accounted for by a given factorial model *or not*, using a conventional fitting criterion. Reproduction of the factorial structure reported by Goldman et al., (1997) is needed to interpret the AEQ scores as measurements of a stable set of underlying constructs. If new data exhibits a different factor structure, one should conclude that the constructs represented by the latent variables in the original factorial model have limited validity. To our knowledge, the possibility of replicating the factorial interpretation of data from the AEQ in a French context has not been documented in the literature.

The AEQ is widely used to collect self-ratings related to six theoretical kinds of alcohol expectancies (constructs), labelled *Global Positive Changes*, *Sexual Enhancement*, *Social and Physical Pleasure*, *Social Assertiveness*, *Relaxation*, and *Arousal/Power* (see Appendix A for a list of items). Goldman et al., (1997) published a successful hierarchic factor analysis of data collected with the AEQ in an American culture context. The present paper investigates the factorial properties of AEQ data collected with a large sample of alcohol drinkers in a French context. Before turning to the analyses of the French data, it is useful to detail Goldman et al.'s (1997) modelling, which will serve as a benchmark for extrapolating to the French context.

1.2. Drawing on Goldman et al.'s (1997) modelling

Goldman et al., (1997) fitted a hierarchical factorial model to a set of data from 428 participants. The model intended to explain the covariance structure from 18 manifest variables by assuming six first-order factors (or facets) whose intercorrelations are explained by one second-order factor. Therefore, the variance of any facet is broken down into the variance of a common factor (the second-order factor) and the variance of a specific, residual factor (for a discussion of the concept of a facet in a hierarchical factor analytic model, see Vautier et al., 2005). The six-facet hierarchical model has acceptable goodness-of-fit, $\chi^2(129, N=446) = 437.47$. As suggested by MacCallum et al., (1996), using the root mean square error approximation (RMSEA) to estimate the ability of the fitted model to provide