

## Psychometric Properties of the Intrinsic Motivation Inventory in a Competitive Sport Setting: A Confirmatory Factor Analysis

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*The present study was designed to assess selected psychometric properties of the Intrinsic Motivation Inventory (IMI) (Ryan, 1982), a multidimensional measure of subjects' experience with regard to experimental tasks. Subjects (N = 116) competed in a basketball free-throw shooting game, following which they completed the IMI. The LISREL VI computer program was employed to conduct a confirmatory factor analysis to assess the tenability of a five factor hierarchical model representing four first-order factors or dimensions and a second-order general factor representing intrinsic motivation. Indices of model acceptability tentatively suggest that the sport data adequately fit the hypothesized five factor hierarchical model. Alternative models were tested but did not result in significant improvements in the goodness-of-fit indices, suggesting the proposed model to be the most accurate of the models tested. Coefficient alphas for the four dimensions and the overall scale indicated adequate reliability. The results are discussed with regard to the importance of accurate assessment of psychological constructs and the use of linear structural equations in confirming the factor structures of measures.*

**Key words:** Intrinsic Motivation Inventory (IMI), confirmatory factor analysis, LISREL, hierarchical models

**W**hy is it that so many millions of people engage in vigorous physical activity suffering through pain, exhaustion, and sometimes injury for no apparent rewards other than the joy and satisfaction of that participation? Why do intercollegiate athletes who have their college education paid for in exchange for their athletic services seemingly become "burned-out" with their sport, enjoy it less, and perceive it more as work than play? Does an activity that was previously enjoyable become more or less enjoyable as a function of introducing competition to that activity? These are a few of the questions that researchers in sport and other achievement domains have attempted to answer over the last decade in studies

dealing with intrinsic motivation, its antecedents, and its consequences. Exercise, sport, and physical activity settings provide excellent settings for attempting to answer the many questions posed regarding intrinsic motivation.

Intrinsic motivation has been investigated from numerous perspectives including, the effects of positive and negative feedback (Vallerand, 1983), the use of external rewards as incentives (Halliwell, 1978; Orlick & Moshier, 1978; E. Ryan, 1977, 1980), and the effects of competition on intrinsic motivation (Deci, Betely, Kahle, Abrahms, & Porac, 1981; Weinberg & Ragan, 1979). The reader is referred to Ryan, Vallerand, and Deci (1984) for a comprehensive review of the sport-related intrinsic motivation literature. In order to effectively examine, understand, and predict the role of any psychological construct in human behavior it is of paramount importance to be able to accurately measure that construct.

Accurate measurement is often hampered by the lack of standardized operational definitions resulting in equivocal findings. Some of the equivocality in the intrinsic motivation literature, can be partially attributed to the inconsistent measurement of the construct. For example, Weinberg and Ragan (1979) reported that male subjects engaged in a competitive task were more intrinsically motivated than their noncompetitive counterparts. Conversely, Deci et al. (1981) reported that subjects, who competed against an opponent, displayed significantly less intrinsic motivation for the task than subjects who did not compete.

The incongruent results of the previous two studies can be directly related to the measurement of intrinsic motivation (Ryan et al., 1984). Ryan and his colleagues (1984) argue that Deci et al. (1981) examined motivation to continue the activity while Weinberg and Ragan

