THE GREEK SPORT SPECTATOR IDENTIFICATION SCALE: MEASUREMENT INVARIANCE OVER PREFERRED AND TARGET TEAM FOCUS POINTS

Nicholas Theodorakis, Aristotle University of Thessaloniki, Greece, ndtheo@phed-sr.auth.gr
Symeon Vlachopoulos, Aristotle University of Thessaloniki, Greece
Daniel Wann, Murray State University, USA
Leigh Robinson, University of Loughborough, United Kingdom

INTRODUCTION

Research on team identification can involve many different points of attachment. Although the majority of work has investigated the identification fans feel for a specific team, fans can also develop a strong sense of attachment with many components of the sporting environment (Trail, Robinson, Dick, & Gillentine, 2003). Similarly, examining fans' identification with a team can be more involved than it appears on the surface. Specifically, one could assess various aspects of team identification, including one's identification with a specific target team (e.g., "How strongly do you identify with Team X") and one's identification with a favorite or preferred team (e.g., "How strongly do you identify with your favorite team, regardless of who that team is"). A meaningful comparison between identification scores grounded on either a "target team" focus point or a "preferred team" focus point would require evidence of the SSIS factorial invariance based on responses representing these two focus points. Such group differences should be examined only after the factorial equivalence of scores has been established for responses representing the two focus points (Rensvold & Cheung, 1998). Thus, the present study examined the extent of measurement invariance of the Greek version of the Sport Spectator Identification Scale (SSIS-G: Theodorakis, Vlachopoulos, Wann, Afthinos, & Nassis, 2006) responses across two samples representing a target team and a preferred team focus point.

METHODS

Two samples were used in the present study. Sample 1 comprised 443 university students recruited from a metropolitan university in Athens, Greece. There were 259 males (58.6%) and 184 (41.4%) females. Sample 2 comprised 180 fans of a professional Greek soccer team that participates in the second professional division in Greece. There were 165 males (91.7%) and 13 females (7.2%) whereas two participants did not provide data. Team identification was assessed using the Greek version of the Sport Spectator Identification Scale – SSIS-G (Theodorakis et al., 2006). The SSIS-G assesses the extent to which a fan feels psychologically attached to a team. Alike the original SSIS (Wann & Brascombe, 1993), the Greek version is uni-dimensional and contains seven Likert-scale items with response options ranging from 1 (low identification) to 8 (high identification). Higher response values represent greater levels of team identification.

RESULTS

Results of the single-group CFA of the SSIS-G responses using the preferred team focus have been reported by Theodorakis et al. (2006). With respect to the CFA of a target team focus SSIS-G responses, the univariate skewness values ranged from –1.21 to 0.17 and the univariate kurtosis values ranged from –1.51 to 0.20. The Mardia's coefficient was 28.12 indicating multivariate normality of the data. Consequently, the Maximum Likelihood method of estimation was used. The single group CFA of the Greek SSIS responses resulted in a good fit of the model to the data. The goodness of fit indices were: chi-square = 46.33, df = 14, $p < .001$, NNFI = .94, CFI = .96, RMSEA = .11, 90% RMSEA CI = .08 - .15. The high RMSEA value was justified by the strong inter-item correlations that increase the power of the test, driving the chi-square value, and consequently the RMSEA value upward (Rigdon, 2005). Item loadings ranged from .50 to .97. The satisfactory goodness

of fit indices in the single-group analysis based on the target team responses allowed to proceed with multi-sample CFA.

Firstly, the configural invariance model (Model 1) was tested without any invariance constraints. The results showed that the model had an acceptable fit to the data. Secondly, the metric invariance model was tested (Model 2) where equality constraints were added onto the factor loading parameters. The model had an acceptable fit to the data. The factor loading associated with item 4 was not invariant. Re-estimation of Model 2 after removing the untenable constraint had an acceptable fit to the data. Thirdly, Model 3 with equality constraints on both the factor loadings that were found invariant in Model 2 and their associated error terms had an acceptable fit to the data. The equality constraints imposed on the error terms of items 1, 3, and 5 were non-invariant. After dropping them, re-estimating the model (Model 3b) displayed acceptable goodness of fit indices with all the remaining equality constraints appearing tenable. Fourthly, Model 4 was estimated with equality constraints on the factor loadings of the items that were invariant in Model 2 and their associated item intercepts. The results demonstrated acceptable goodness of fit indices for Model 4. The LM test showed that the constraints of the item intercepts for items 1, 3, and 7 were not tenable. It has to be noted that in Model 4 the factor loading of item 4 was fixed to unity for identification purposes and consequently no item intercept constrained was imposed on item 4.

DISCUSSION

The present article examined the extent of measurement invariance between SSIS-G responses representing either a target team focus point or a preferred team focus point. Demonstration of measurement invariance between these types of responses would imply that meaningful comparison between SSIS-G scores representing either of the two focus points may be performed. Establishing factorial equivalence across responses representing these focus points is a prerequisite for group differences to be examined (Rensvold & Cheung, 1998). That is, demonstration of factorial invariance would ensure that possible score differences are real differences on the construct being measured and not due to differential functioning of the test across populations (Millsap & Kwok, 2004). Theoretical implications for sport management researchers will be presented.

REFERENCES

Millsap, R. E., & Kwok, O. (2004). Evaluating the impact of partial factorial invariance on selection in two populations. Psychological Methods, 9, 93-115.

Rensvold, R. B., & Cheung, G. W. (1998). Testing measurement models for factorial invariance: A systematic approach. Educational and Psychological Measurement, 58, 1017-1034.

Rigdon, E. (2005, March 16). Discrepancies between SRMR and RMSEA [Msg 291]. Message posted to http://bama.ua.edu/cgi-in/wa?S1=semnet/message/291.

Theodorakis, N. D., Vlachopoulos, S. P., Wann, D., Afthinos, Y., & Nassis, P. (2006). Measuring team identification: Translation and cross-cultural validity of the Sport Spectator Identification Scale. International Journal of Sport Management.

Trail, G. T., Robinson, M. J., Dick, R. J., & Gillentine, A. J. (2003). Motives and points of attachment: Fans versus spectators in intercollegiate athletics. Sport Marketing Quarterly, 12, 217-227.