The researchers examined a survey designed for measuring “basic needs” at work and used it to measure the same constructs specifically in college students. This original scale referenced is called the Basic Needs Satisfaction At Work Scale (BNSW-S), and the newly derived scale is called the Basic Needs Satisfaction Scale at College (BNSC-S).

***Underlying concepts***

The concepts examined encompass those examined in Self Determination Theory, which the researchers summarized. “The central concept for SDT postulates that individuals are motivated by fundamental psychological needs for autonomy, competence, and relatedness, which are necessary for healthy development and well-being (Deci & Ryan, 2000)”

The authors go on to say that while SDT is well established in academic literature, there are few psychometrically rigorous examinations of the measures. SDT specifies 3 constructs that are deemed basic psychological needs: autonomy, competence, and relatedness. Studies purport that these needs lead to psychological wellbeing, and that people will put forth effort to correct any conditions where one or more are lacking. Autonomy equates with freedom to assess needs in their environment and the freedom to enact changes when necessary. Competence appears to be an analogue of self-efficacy as supported by their actions and opportunities. Relatedness refers to an individual’s perception about relationships with others - belongingness.

Predicted outcomes of high self-determination measures are persistence, academic success, high GPA, academic goals and academic self-efficacy, skills related to academic success. The researchers demonstrate support for these predicted outcomes in the literature.

A primary goal of this examination was to propose strategy for retaining college students, as it was operating under the assumption that this is an important goal of schools.

***Methods***

Sample size was 541 college students, with surveys obtained on the last day of class. BNSW-S questions were evaluated and chosen based on contextual appropriateness. Survey items were groups into *Satisfaction*  and *Self Determination* groups. Classical test theory procedures were either referenced in previous literature for the given measures or were performed by the researchers who evaluated the results as adequate. The researchers used the Ltm package in R to perform IRT analysis for each of the SDT constructs.

Details of the IRT analysis are provided - several items were removed because they did not meet the standards of the confirmatory factor analysis. IRT contradicted this decision for one item, and researchers stated that it could have been retained. The researchers noted that the IRT pointed to the measure being most sensitive in the below average to average range of the latent trait spectrum, suggesting that this should be corrected in future research.

***Conclusion***

It appears that the researchers are considering the 3 SDT measures as “subscales” measuring one trait. It was also noted that the sample size was relatively small for an IRT analysis. Based on my limited understanding of the concepts, this appears to be an unconventional and possibly inappropriate application of IRT.

**Reference**

Jenkins-Guarnieri, M. A., Vaughan, A. L., & Wright, S. L. (2015). Development of a self-determination measure for college students: Validity evidence for the Basic Needs Satisfaction at College Scale. *Measurement and Evaluation in Counseling and Development*, *48*(4), 266–284.