Student engagement in Indian context: UWES-S validation and relationship with burnout and life satisfaction

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Abstract: The student version of Utrecht work engagement scale (UWES-S) is increasingly being employed to assess student engagement without sufficient evidence for its validity, reliability and generalisability. This research seeks to investigate the psychometric properties of UWES-S in the Indian context. Two studies are reported. Study 1 (N = 207) investigates the 14-item UWES-S for factorial and convergent validity, and internal consistency. Study 2 (N = 279) revalidates findings from study 1 and examines relationships with burnout and life satisfaction. The three-factor morphology of UWES-S stands validated across both the studies. Evidence for convergent validity and internal consistency has been provided. The research also proposes a nine-item version of UWES-S based on psychometric properties and item analysis. Further, student engagement is found to be negatively associated with student burnout.
and positively related to student life satisfaction. This research has a few limitations. Data for analysis has been obtained only from management students. Further, predictive validity has been tested with burnout and life satisfaction only.

**Keywords:** short scale; student engagement; UWES (student version); Indian context; scale validation.


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1 Introduction

Owing to various reported positive consequences, student engagement is a much sought after experience in educational practice as well as a widely explored construct in educational research. The state of engagement occurs when students are invested in their learning behaviourally, cognitively, and emotionally (Poitras et al., 2013). It is often viewed as a ‘make-or-break factor’ for learning to take place (Dean and Jolly, 2012). Zepke (2015) notes that student engagement positively relates to student success, quality teaching, and individual and social wellbeing. Further, student engagement is likely to enhance achievement levels and predict academic success (Fursman, 2012; Newmann, 1992).

One of the contemporary measures to assess student engagement was conceptualised and developed by Schaufeli et al. (2002). Labelled as Utrecht work engagement scale – student version (UWES-S), it originated as an offshoot of the research by the same authors on work engagement, a related construct. Off late, its usage among researchers (e.g., Gan et al., 2007; Zhang et al., 2007; Sulea et al., 2015) has gained momentum. This calls for investigation of its psychometric properties in order to gain confidence with respect to validity, reliability and generalisability. Accordingly, this research aims to validate UWES-S in the Indian context.

The paper is organised as follows. In the next section, we seek to highlight the importance of validity, reliability and generalisability of measures across contexts. Further, we underline the significance of the Indian context. Study 1 follows this, where we investigate factorial validity, convergent validity, and internal consistency of the UWES-S. The nine-item UWES-S obtained in study 1 is subjected to re-investigation for its factorial validity and internal consistency in study 2. Additionally, we examine it for convergent validity as well as the relationship of student engagement with burnout and life satisfaction. Discussion and conclusion follow.

2 Present research

Extant literature provides sufficient evidence regarding failure of numerous measures in validity tests undertaken in cultural contexts, different from their origin. For example, Supple et al. (2009) upon exploring cross cultural validity of parental autonomy granting measure among adolescents of four countries, reported that two items (i.e., “freedom to make decisions” and “encouragement of parents to participate in family decision making”) demonstrated low factor loadings in samples originating from China, Mexico, and India, when compared to the sample from the USA. They concluded that while there may exist similarity concerning adolescents’ expectations for freedom of choice on
lifestyle issues, yet on issues concerning basic values (like decision making, deciding right from wrong), adolescents from collectivistic culture might expect less freedom. Similarly, in a study on Indian workforce, Gupta and Singh (2013) uncovered a four-factor structure of organisational justice upon employing the instrument of Colquitt (2001), which was originally developed for assessing only three factors of the construct (interpersonal justice, informational justice, and procedural justice). The additional factor, labelled as empowerment justice, led them to infer that the Indian workforce perceives organisational justice differently, with ‘voice’ being a distinct and important parameter. In summary, one needs to exercise caution in uninhibited ‘borrowing’ (Douglas and Nijssen, 2003) of psychological measures developed in one context for usage in another. Instead, research efforts should be directed towards establishing validity and reliability of developed measures across cultures and contexts. Not only it enables comparison of data from different samples and from different backgrounds, but it also helps develop dependable psychological instruments, which in turn promotes enhanced generalisability of inferences (Borsa et al., 2012).

Accordingly, this research seeks to validate UWES-S in the Indian context. The choice of context for this research is significant. As of 2002–2003, there are 196 universities, 76 deemed universities, five institutions established through state and central legislations, 11 institutions of national importance, and nearly 13,150 colleges including around 1,600 women colleges in the country, yet in many quarters (i.e., government, academia, and independent research agencies) it has been proclaimed that higher education in India is a victim of numerous systemic deficiencies (for details refer Cheney et al., 2005; Kapur and Mehta, 2004), which in turn is contributing to deteriorating quality. As a result, while manpower shortage in various sectors is alarming, regrettably most of the graduates of Indian universities are deemed unemployable. According to Aspiring Minds (2014, p.7) “less than 20% engineers are employable for software jobs, 7.49% are employable for core engineering jobs, even though more than 90% aspire for such jobs”. It further adds that the engineering graduates possess insufficient domain knowledge and are incapable of applying basic principles of their engineering education to real world problems. The report argues that there exists a gap between teaching and learning which is responsible for this predicament. This is unfortunate for in the prevalent and still growing knowledge economy, tertiary education is essential for national, societal and individual development (Dahlman and Utz, 2005). It is reported that many recruiters end up retraining hired graduates (see Cheney et al., 2005). However, we believe that this endeavour to re-educate the graduates is redundant, expensive, and unsustainable in the long run. Alternatively, if the concerned authorities attempt to assess the engagement level of students in higher education, they will receive useful hints for appropriate interventions, which can possibly propel Indian education system to quality and excellence (refer Taylor and Parsons, 2011 for a discussion on possible interventions). Doubtlessly, the first step for heralding this change is to possess a valid and reliable measure of student engagement, which is the intent of this research.

3 Study 1

Study 1 was designed to investigate factorial validity, convergent validity, and internal consistency of UWES-S.
3.1 Dimensionality of UWES-S

Work engagement is defined as “a positive, fulfilling, work-related state of mind that is characterised by vigour, dedication, and absorption” (Schaufeli et al., 2002a). Vigour (VIG) is thus defined as displaying high levels of energy and mental resilience while working, willing to invest effort in one’s work, and persisting even in the face of difficulties. Dedication (DED) is characterised by being strongly involved in one’s work as well as experiencing a sense of significance, enthusiasm, inspiration, pride, and challenge. Finally, absorption (ABS) is understood to be full concentration and happy engrossment in one’s work, whereby time passes quickly and one has difficulties with detaching oneself from work (Schaufeli et al., 2002a). Anchored on this conceptualisation, two versions of self-report (UWES) were developed for administration to students and employees. Initially both the versions comprised of 24 items, which was later revised to 17 items upon analysis on a sample of Spanish undergraduate students and employees. All the three subscales in student version (UWES-S) had alpha values > 0.7 and were strongly interrelated (mean r = 0.83; Schaufeli et al., 2002a). Nevertheless, three-factor structure of UWES-S was found to fit the data better than a single factor, thus lending confidence on the initial conceptualisation.

In an attempt to validate UWES-S (17 items) across contexts, Schaufeli et al. (2002b) investigated fit indices for the measure using undergraduate student samples from the universities of Spain, Portugal and the Netherlands. Contrary to expectations, the hypothesised three-factor model did not fit conclusively to data from any of the three countries. Nevertheless, after removing three non-significant or poorly loaded items (two-items from ABS and one item from VIG), the fit indices involving Spanish and Portuguese sample improve significantly. However, the Dutch sample still showed poor fit indices. Two pairs of errors were allowed to correlate in all three samples (among ABS and VIG items), which finally provided acceptable fit indices. The inter-factor correlations of UWES-S (14 items) were very high (r = 0.71 to 0.94), prompting the authors to check for existence of a single factor. The fit indices were unacceptable for the single factor thus validating the three-factor model conclusively. Barring, VIG in the Dutch sample and ABS in Spanish and Dutch sample, the alpha values of the revised subscales were all above 0.70 (Schaufeli et al., 2002b).

Our literature review reveals a limited employment of UWES-S. Further, such a usage is characterised by inconsistency with respect to number of items, and lack of evidence vis-à-vis its psychometric properties. For example, Salmela-Aro and Upadyaya (2014) employ a nine-items scale modelled by them after the nine-item employee version of UWES (Schaufeli et al., 2006) in the Finnish context. But apart from reporting the alpha value for the overall scale (> 0.90), they provide no information on its factorial validity, item-factor loading indices, and inter-factor correlations. More importantly the complete list of nine items is not provided. In another study involving Chinese students, Zhang et al. (2007) report using a Chinese version of UWES-S (17 items) for assessing engagement. For arriving at the scale they modified the original items of a validated Chinese version of UWES (Zhang and Gan, 2005) replacing ‘work or job’ with ‘studies or class’. While the alpha of the subscales was reported to be between 0.7 and 0.8, there is again little evidence on other psychometric properties. Interestingly, in another study by Gan et al. (2007) involving Chinese undergraduate students, it was reported that the Chinese version of UWES-S consists of 16 items. Similarly, Sulea et al. (2015) employed
A Romanian version of UWES-S (17 items) in their study. They found evidence in support of the three-factor structure and reported an alpha of 0.92. More recently, a one-factor structure of UWES-S (17 items and nine items version) was found to fit the data better than the hypothesised three-factor structure in Korean context (Jasmin, 2016). In summary, the number of items was inconsistent across studies. Moreover, the complete psychometric properties were not provided in many of the studies. Significantly, in none of the studies, we found UWES-S (14 items, Schaufeli et al., 2002b) administered. Yet there is a universal agreement among researchers on the three-factor morphology of UWES-S. Accordingly we hypothesise:

Hypothesis 1 (H1) Vigour, dedication, and absorption will exist as distinct dimensions of student engagement (measured through UWES-S) in the Indian context.

3.2 Sample

The respondents were the students of two public management institutes of India (one situated in north, while the other in south-western India) offering post-graduate, doctoral, and executive education in management, and the Department of Management Studies of a private university (situated in north India) offering both undergraduate and post-graduate education in management. Employing non-probabilistic sampling, we contacted them in person and requested them to respond to a questionnaire after explaining the purpose of this research. Participants were assured of the confidentiality of their responses. Against a total of 400 questionnaires distributed, 207 usable responses were received (response rate = 52%). Approximately 7% of the respondents were pursuing under-graduate studies, 7% were enrolled in the doctoral program, 54% were pursuing a postgraduate program, while 32% consisted of working professionals pursuing various executive education programs. The average work experience of executive participants was calculated to be about 12 years (S.D. = 4.5). About 68% of the responses were received from the two public management institutes (post-graduates, doctoral and executive students). The mean age of sample was found to be 26.83 years (S.D. = 6.44) with a minimum of 18 years and a maximum of 49 years. Further, 36% of the respondents were females.

3.3 Instruments

3.3.1 Utrecht work engagement scale – student version (14 items)

The respondents were provided with Schaufeli et al.’s (2002b) 14-item student version of work engagement scale [UWES-S (14 items)]. It is a self-report designed to assess the extent of the students’ vigour (VIG; five items), dedication (DED; five items) and absorption (ABS; four items). A sample item for VIG reads as, “when I’m studying, I feel mentally strong”, while a sample item for DED reads as “I find my studies to be full of meaning and purpose”. Similarly a sample item for ABS reads as “time flies when I’m studying”. The items were to be responded on a seven-point Likert scale (1 – never, 7 – always).
3.4 Procedure

3.4.1 Test for normality

Byrne (2010) recommends that univariate normality of the items is a perquisite for SEM. Accordingly we first calculated the skewness and kurtosis statistics of the 14-items. Items that exhibit skewness values and kurtosis values beyond ±2 and ±7 respectively are considered non-normal (West et al., 1995).

3.4.2 Internal consistency

We calculated the Cronbach alpha coefficients for each subscale to assess their internal consistencies. A value between 0.7 – 0.9 is usually recommended. A value lower than 0.7 can result from fewer items or can indicate poor inter-correlations between items and presence of heterogeneous constructs. On the contrary, a value higher than 0.9 indicates item redundancy “rather than a desirable level of internal consistency” (Streiner, 2003). In fact, it presents a case for scale reduction (Tavakol and Dennick, 2011).

3.4.3 Model testing

For hypotheses testing, we employed SEM methods implementable through AMOS 19 (Byrne, 2010). Accordingly, to test Hypothesis 1, we defined two competing models in accordance with Schaufeli et al. (2002a, 2002b) to which we inputted the data for determining the best fit. While model 1A was designed to explain the correlations between the three subscales (VIG, DED, and ABS) in terms of a higher order factor called ‘student engagement’, model 1B assumed a single underlying factor that explained the correlations between all 14 items. Our decision to formulate model 1B was influenced by the very high correlations observed between the latent factors across national contexts (mean r = 0.83, Schaufeli et al., 2002a; r = 0.71 – 0.94, p < 0.001, Schaufeli et al., 2002b).

3.4.4 Fit indices

We incorporated maximum likelihood estimation methods in our analysis, the input being the covariance matrix of the items. In line with recommendation from Hoe (2008), we calculated the following fit indices, i.e., the ratio of $\chi^2$ statistic to degrees of freedom (CMIN/df), Tucker Lewis index (TLI), the comparative fit index (CFI), and the root mean square error of approximation (RMSEA), to assess model fit.

3.5 Results

3.5.1 Normality

The skewness (range between – 0.928 and – 0.243) and kurtosis (range between – 1.039 and 0.850) values of the UWES-S items were found to within acceptable limits. Thus, we proceeded with the analysis of internal consistency, factorial validity, and convergent validity of the instrument.
3.5.2 Internal consistency

We computed the Cronbach alpha coefficients to determine the internal consistencies of the three subscales. VIG (five items) reported an alpha score of 0.816, while the score of DED (five items) was 0.894. The score of ABS (four items) was 0.837.

3.5.3 Factorial validity

First, the inter-factor correlations were estimated. Our calculation revealed a high correlation between the subscales \(r (\text{VIG} \mid \text{DED}) = 0.743, p < 0.01; r (\text{DED} \mid \text{ABS}) = 0.797, p < 0.01; r (\text{ABS} \mid \text{VIG}) = 0.876, p < 0.01\]. Such high correlations are consistent with Schaufeli et al. (2002a, 2002b) and provide indication of possible cross loadings between items.

Table 1  
Comparison of fit indices (study 1, N = 207)

<table>
<thead>
<tr>
<th>Model</th>
<th>UWES-S version</th>
<th>CMIN/DF</th>
<th>TLI</th>
<th>CFI</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>14-items three factor</td>
<td>2.744</td>
<td>0.911</td>
<td>0.928</td>
<td>0.092</td>
</tr>
<tr>
<td>1B</td>
<td>14-items mono factor</td>
<td>5.120</td>
<td>0.791</td>
<td>0.823</td>
<td>0.141</td>
</tr>
<tr>
<td>2</td>
<td>12-items three factor</td>
<td>2.224</td>
<td>0.950</td>
<td>0.961</td>
<td>0.077</td>
</tr>
<tr>
<td>3</td>
<td>Nine-items three factor</td>
<td>1.899</td>
<td>0.972</td>
<td>0.982</td>
<td>0.066</td>
</tr>
</tbody>
</table>

Notes: The guidelines for ‘acceptable values’ were borrowed from Hoe (2008); CMIN/DF = ratio of \(\chi^2\) statistic to the degrees of freedom; TLI = Tucker-Lewis index; NFI = normed fit index; GFI = goodness of fit index; CFI = confirmatory fit index; RMSEA = root mean square error of approximation.

Thereafter we subjected the responses received on the 14-item UWES-S to a confirmatory factor analysis (CFA). While the three-factor conceptualisation (model 1A) fared relatively well, the fit of the mono-factor (model 1B) was not quite impressive (see Table 1). However, based on the RMSEA value (i.e., 0.092), model 1A exhibited a mediocre fit. This prompted us to examine the communalities and factor loadings of each of the items (see Table 2). According to Costello and Osborne (2005), communalities and factor loadings of the items should be at least 0.40 and 0.50 respectively. Items VIG5 and DED5 had communalities of 0.234 and 0.292 respectively, thus making them candidates for exclusion. Additionally, VIG5 has a factor loading of only 0.483 that makes it a stronger case for removal. A deeper examination of the items revealed additional reasons for their exclusion. With respect to VIG 5 (i.e., “when I get up in the morning, I feel like going to class”), our observation suggested that typical of any highly demanding professional courses (like management), the students might be engaged in projects, group discussions, assignments that run late into the nights. Often students are engaged in studies at varied times and in different settings, not necessarily in the mornings and in the classroom. Thus, VIG5 may not be appropriate for assessment of vigour due to its inherent temporal and spatial assumptions. Similarly on examining DED5 (i.e., “I find my studies challenging”), we believe it indicated a different meaning altogether when compared to the rest of the items measuring dedication. While DED1 indicated “full of meaning and purpose”, DED2 indicated, ‘inspirational’, DED3 indicated ‘enthusiastic’, and DED4 indicated ‘pride’, DED5 instead indicated ‘challenge’ that thus may have been interpreted differently. Moreover, exclusion of VIG5 and DED5 improved the internal consistency of VIG (new alpha = 0.853) and DED (new alpha = 0.915) subscales respectively (Table 3).
Table 2
Item analysis, factor loadings and communalities (study 1, N = 207)

<table>
<thead>
<tr>
<th>Item Code</th>
<th>Factor loading</th>
<th>Communalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIG1</td>
<td>0.826</td>
<td>0.683</td>
</tr>
<tr>
<td>VIG2</td>
<td>0.754</td>
<td>0.568</td>
</tr>
<tr>
<td>VIG3</td>
<td>0.666</td>
<td>0.444</td>
</tr>
<tr>
<td>VIG4</td>
<td>0.813</td>
<td>0.660</td>
</tr>
<tr>
<td>VIG5</td>
<td>0.483</td>
<td>0.234</td>
</tr>
<tr>
<td>DED1</td>
<td>0.858</td>
<td>0.736</td>
</tr>
<tr>
<td>DED2</td>
<td>0.887</td>
<td>0.787</td>
</tr>
<tr>
<td>DED3</td>
<td>0.889</td>
<td>0.790</td>
</tr>
<tr>
<td>DED4</td>
<td>0.782</td>
<td>0.612</td>
</tr>
<tr>
<td>DED5</td>
<td>0.540</td>
<td>0.292</td>
</tr>
<tr>
<td>ABS1</td>
<td>0.744</td>
<td>0.554</td>
</tr>
<tr>
<td>ABS2</td>
<td>0.756</td>
<td>0.572</td>
</tr>
<tr>
<td>ABS3</td>
<td>0.749</td>
<td>0.561</td>
</tr>
<tr>
<td>ABS4</td>
<td>0.757</td>
<td>0.573</td>
</tr>
</tbody>
</table>

Notes: (1) The values in the table indicate factor loadings of the items on their respective subscales; (2) * indicates items removed in first wave, † indicates items removed in second wave, ‡ indicates items removed in third wave, (*) indicates items that are part of the nine-item UWES-S.
Upon investigating the model fit indices of the resulting 12-item UWES-S (model 2), we found all the fit indices improve significantly (CMIN/df = 2.224, TLI = 0.950, CFI = 0.961, RMSEA = 0.077). However, it was only a ‘reasonable’ fit [see recommendations of Hoe (2008) with respect to RMSEA], which influenced us to look at the item specificities (Table 2). Since the item factor loadings and communalities were above threshold (Costello and Osborne, 2005), we examined the modification indices. The modification indices prompted us to correlate the errors of the items VIG3 and VIG4. Byrne (2010) suggests that error correlation between items reveals high degree of content overlap between them. Upon examining VIG3 and VIG4, it appeared that they both captured the dimension ‘physical strength’. Thus in interest of parsimony, and after being guided by the relatively low communality (0.459) and factor loading (0.667), we decided to delete VIG3 from the measure. It must be noted that the deletion of VIG3 did not significantly decrease the internal consistency (alpha = 0.834, Table 3).

Further, keeping in mind the growing popularity of using a nine-items scale (e.g., Salmela-Aro and Upadyaya, 2014), we also excluded ABS1 and DED4 keeping in mind the relative low communalities and factor loadings when compared to other items in their respective subscales. Such a move also helped us to introduce a well-balanced scale where every subscale is assessed through equal number of items.

The nine-item UWES-S (model 3) was thereafter subjected to another CFA. The model fit indices improved markedly (CMIN/df = 1.899, TLI = 0.972, CFI = 0.982, RMSEA = 0.066) indicating a good fit. It even exhibited a better fit than the 14 items USES-S with all factor loadings and communalities above 0.50 and 0.40 respectively. The internal consistencies of the subscales were calculated to be 0.834, 0.910, and 0.794 for VIG, DED, and ABS respectively.

### 3.5.4 Convergent validity

Convergent validity represents the extent to which indicators of a specific construct ‘converge’ or share a high proportion of variance in common [Hair et al., (2006), p.795]. High values of factor loadings (0.70 and above with a minimum of 0.50) and average variance extracted (0.50 and above) provide the evidence of convergent validity (Malhotra and Dash, 2011). On examining the factor loadings of UWES-S (nine-items), they were found to be in the range of 0.73 to 0.89 (Table 2). Further, average variance explained (AVE) for VIG, DED and ABS were calculated to be 0.63, 0.77 and 0.57 respectively, thus providing encouraging evidence for convergent validity.

### Table 3 Stage-wise internal consistency (study 1, N = 207)

<table>
<thead>
<tr>
<th>Stage</th>
<th>Number of items</th>
<th>Deleted item</th>
<th>Vigour</th>
<th>Dedication</th>
<th>Absorption</th>
<th>UWES-S</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>14-items</td>
<td>None</td>
<td>0.816</td>
<td>0.894</td>
<td>0.837</td>
<td>0.928</td>
</tr>
<tr>
<td>2</td>
<td>13-items</td>
<td>VIG5</td>
<td>0.853</td>
<td>-</td>
<td>-</td>
<td>0.929</td>
</tr>
<tr>
<td>3</td>
<td>12-items</td>
<td>DED5</td>
<td>-</td>
<td>0.915</td>
<td>-</td>
<td>0.929</td>
</tr>
<tr>
<td>4</td>
<td>11-items</td>
<td>VIG3</td>
<td>0.834</td>
<td>-</td>
<td>-</td>
<td>0.925</td>
</tr>
<tr>
<td>5</td>
<td>Ten-items</td>
<td>DED4</td>
<td>0.834</td>
<td>0.910</td>
<td>0.837</td>
<td>0.924</td>
</tr>
<tr>
<td>6</td>
<td>Nine-Items</td>
<td>ABS1</td>
<td>0.834</td>
<td>0.910</td>
<td>0.794</td>
<td>0.918</td>
</tr>
</tbody>
</table>
4 Study 2

Study 2 was conducted to cross-validate the three-factor structure of the nine-items UWES-S obtained in study 1. In addition to the internal consistency of its subscales, we also investigated evidence for its convergent validity as well as the relationship of student engagement with burnout and life satisfaction.

4.1 Relationship of student engagement with student burnout and student life satisfaction

4.1.2 Relationship with student burnout

Burnout is often understood to be “a state of tiredness or frustration linked to involvement for a cause, lifestyle or a relationship that hasn’t brought about the expected gratification” (Freudenberger, 1974). It is a state of physical, mental, and emotional exhaustion, thanks to long preoccupation in emotionally demanding situations (Pines and Aronson, 1988). On the other hand, engagement connotes high level of energy, strong identification, and being happily engrossed in one’s role (Schaufeli et al., 2002a). Thus it is no surprise that Maslach and Leiter (1997) thought burnout and engagement to be antipodes. In fact, student burnout and student engagement were found to be moderately and negatively correlated in many studies (e.g., Schaufeli et al., 2002b; Salmela-Aro et al., 2009). Similarly, student performance exhibited a weak negative correlation with student burnout (e.g., McCarthy et al., 1990; Schaufeli et al., 2002b), and a positive correlation with student engagement (Schaufeli et al., 2002b). Accordingly, we hypothesise:

Hypothesis 2  Student engagement (as measured with UWES-S) will negatively relate to student burnout.

4.1.3 Relationship with student life satisfaction

Rooted in research on subjective well-being (please refer Diener et al., 1985), life satisfaction is understood to be “a global assessment of person’s quality of life, according to his chosen criteria” (Shim and Johnson, 1978). It originated from a gradual recognition by researchers that wellness has a broader meaning and ought not to be limited to one’s physical health (Benjamin, 1994; Hermon and Hazler, 1999). Today, it is argued to be the most stable aspect of subjective wellbeing (Diener et al., 2002). One important consequence of this observed in the field of higher education is a proliferation in conceptualisation and development of wellness programs in campuses (Hermon and Hazler, 1999). However, academic research on student life satisfaction is still sparse (Lewis et al., 2011), with existing research largely focusing on student dropout/student retention. For instance, in a study involving the inner-city African-American adolescent males, Zimmerman et al. (1995) reported that completion of high school enhanced one’s level of satisfaction. In similar lines, Frisch et al. (2005) provided evidence that GPA and life satisfaction, independently and together, predicted the possible dropout of college students.

We contend that student engagement will relate positively with student life satisfaction. This is because engagement is associated with a pleasant state that is
associated with positive accomplishments (UWES manual; Schaufeli and Bakker, 2003). Thus engaged students find their studies ‘meaningful, inspiring, and challenging’ (Schaufeli et al., 2002b) which we argue makes them perceive their life more kindly than their disengaged counterparts. Moreover, taking cue from Schaufeli and others’ qualitative interviews involving a Dutch sample, engaged students can be thought to take initiatives and generate their own positive feedback [please refer to UWES Manual (Schaufeli and Bakker, 2003)]. This arguably aids them in exercising control on events (Bakker and Demerouti, 2008), which we believe promotes an imagery of a well-lived, consciously involved and satisfied life. Our argument gets strength from the finding of Lewis et al. (2011), who based on a study on 7th and 8th grade students of a large middle school in South-Eastern United States, presented evidence that students’ cognitive engagement influences their life satisfaction. Thus, we make the following conjecture:

Hypothesis 3 Student engagement (as measured with UWES-S) will positively relate to student life satisfaction.

4.2 Sample

The participants (N = 279) constituted exclusively the students pursuing a post-graduate diploma in management (PGDM) program from two publicly funded management institutes in north and south-western India. From a total of 400 questionnaires distributed, 279 usable responses were received (response rate = 70%). The mean age was calculated to be 23.75 years (S.D. = 1.61) with a minimum of 20 years and a maximum of 29 years. 42% of the respondents were females. Similar to study 1, convenience sampling was employed, with participants explained the purpose of this research and assured of confidentiality of their responses.

4.3 Instruments

4.3.1 Nine-items Utrecht work engagement scale student version

The respondents were provided with the nine-items UWES-S obtained from study 1. Each of the dimensions, namely vigour, dedication and absorption were assessed using three items. The items were to be responded on a seven-point Likert scale (1 – never, 7 – always).

4.3.2 Burnout (BMS)

Malach-Pines (2005) developed the ten-item short burnout measure to capture the essence of an individual’s physical exhaustion, emotional exhaustion, and mental exhaustion. A sample item includes ‘hopeless’. The items of BMS were to be responded on a seven-point Likert scale (1 – never, 7 – always).

4.3.3 Satisfaction with Life (SWL)

SWL is a five-item self-report designed by Diener et al. (1985) to measure life-satisfaction as a cognitive-judgmental process. The responses were solicited from the participants on a five-point Likert scale (1 – strongly disagree, 5 – strongly agree). A sample item reads, “the conditions of my life are excellent”.
4.4 Procedure

Similar to study 1, we assessed the skewness and kurtosis statistics of the nine-items to check for any serious deviations from normality. We defined two models, a higher order three-factor structure (model 4A) and a mono-factor structure (model 4B), whose fit indices were assessed.

4.5 Results

4.5.1 Normality

The skewness (range: –0.792 and 0.121) and kurtosis (range: –0.289 and 1.058) values of the UWES-S items were found to be within acceptable limits, thereby allowing us to assess its factorial validity, convergent validity, and internal consistency.

4.5.2 Factorial validity

We employed CFA (through AMOS; Byrne, 2010) to test how well the data set fits the proposed measurement structure. The higher order model had acceptable fit indices (CMIN/DF = 1.991, TLI = 0.969, NFI = 0.960, GFI = 0.962, CFI = 0.979, and RMSEA = 0.060), while the mono-factor model exhibited an unsatisfactory model fit (CMIN/DF = 8.744, TLI = 0.758, NFI = 0.802, GFI = 0.812, CFI = 0.819, and RMSEA = 0.167). The results thus reaffirmed the higher order three-factor structure for the nine-items measure. The item to factor loadings ranged between 0.592 and 0.909. However the communalities for items VIG2, ABS2, and ABS3 were estimated to be below 0.50 (Table 4).

Table 4  Factor loadings, communalities and internal consistencies (study 2, N = 279)

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor loadings</th>
<th>Communalities</th>
<th>Internal consistency</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIG1</td>
<td>0.732</td>
<td>0.535</td>
<td>0.755</td>
</tr>
<tr>
<td>VIG2</td>
<td>0.592</td>
<td>0.350</td>
<td></td>
</tr>
<tr>
<td>VIG4</td>
<td>0.823</td>
<td>0.677</td>
<td></td>
</tr>
<tr>
<td>DED1</td>
<td>0.826</td>
<td>0.682</td>
<td>0.894</td>
</tr>
<tr>
<td>DED2</td>
<td>0.909</td>
<td>0.826</td>
<td></td>
</tr>
<tr>
<td>DED3</td>
<td>0.847</td>
<td>0.718</td>
<td></td>
</tr>
<tr>
<td>ABS2</td>
<td>0.673</td>
<td>0.454</td>
<td>0.741</td>
</tr>
<tr>
<td>ABS3</td>
<td>0.675</td>
<td>0.456</td>
<td></td>
</tr>
<tr>
<td>ABS4</td>
<td>0.757</td>
<td>0.573</td>
<td></td>
</tr>
</tbody>
</table>
4.5.3 Internal consistency

As in the study 1, internal consistency was reassessed for each of the three subscales. While VIG (three items) reported an alpha score of 0.755, the alpha score for DED (three items) was calculated to 0.894. Finally the alpha score for ABS (three items) was calculated to be 0.741. The scores are above the minimum acceptable limit and hence provide encouraging evidence on the internal consistencies of the subscales.

4.5.4 Convergent validity

The factor loadings of VIG2, ABS2, and ABS3 were observed to be below 0.70 yet above the minimum limit of 0.50 (see Table 4). The remaining items exhibited factor loadings greater than 0.70. Calculating for AVE, it was found to be 0.52 for VIG, 0.74 for DED, and 0.49 for ABS. Although AVE for ABS was marginally lower than the recommended minimum limit of 0.50, it should not be a cause for concern, as the scale provided satisfactory evidence for its internal consistency.

4.5.5 Relationship with burnout and life satisfaction

As hypothesised, student engagement was expected to negatively relate to student burnout (Hypothesis 2) and positively relate to student life satisfaction (Hypothesis 3). Accordingly, we employed structural equation modelling (SEM) for testing these hypotheses. Towards this, we first defined a measurement model to assess the fit of our data. In line with the CFA results of study 1 and study 2, student engagement was modelled as a second order factor, while student burnout and student life satisfaction were modelled as first order factors in accordance with the extant literature. The factors were then allowed to correlate. The fit indices were found to be encouraging (CMIN/DF = 1.997, TLI = 0.893, NFI = 0.828, GFI = 0.869, CFI = 0.905, and RMSEA = 0.060) for further analysis. Consequently, we went ahead to test the hypothesised relationships. The structural model with the higher-order student engagement predicting student life satisfaction and student burnout also fitted the data well (CMIN/DF = 2.136, TLI = 0.878, NFI = 0.815, GFI = 0.860, CFI = 0.891, and RMSEA = 0.064).

Our results revealed that student engagement positively influences student life satisfaction ($\beta = 0.261, p < 0.001$), while negatively predicting student burnout ($\beta = -0.338, p < 0.001$). In other words, engaged students are likely to be satisfied with life and experience low burnout. Further, the variance explained, as calculated by squared multiple correlations, was calculated to be 7% and 11% for life satisfaction and burnout respectively. Thus, the results are in support of the proposed hypotheses and lend credence to the revised nine-item UWES-S.

5 Discussions and limitations

The objective of this study was to investigate factorial validity, convergent validity, construct validity and internal consistency of UWES-S (Schaufeli et al., 2002b) in the
Student engagement in Indian context. Our two sample confirmatory factor analyses provided evidence in support of the higher order three-factor model. However, the findings ought to be interpreted with caution.

It should be noted that there exists a substantial relationship between absorption and dedication (mean \( r = 0.751, p < 0.01 \)), as well as absorption and vigour (mean \( r = 0.795, p < 0.01 \)). In other words, mean overlap between absorption and dedication was estimated to be approximately 56%, while mean overlap between absorption and vigour was estimated to be approximately 63%. Such an extent of overlap raises questions on the distinctiveness of the construct of absorption from that of dedication and vigour. On the contrary, the relationship between vigour and dedication was found to be moderate (mean \( r = 0.679, p < 0.01 \)), amounting to an approximate overlap of 46.5% between the dimensions. While this is consistent with the original findings of Schaufeli et al. (2002a, 2002b), yet it also unravels the unsuitability of the current items towards representing the subscales distinctly. Accordingly, it is advisable that the total score of the scale be preferred over employing the scores of the individual subscales (UWES manual; Schaufeli and Bakker, 2003). This inference gets further accentuated when it was estimated that approximately 20% of the items of the original scale showed evidence of poor communalities. Though in study 1 we tried to prune these out, thereby reducing the length of the UWES-S to nine-items, yet in study 2 a few items (VIG2, ABS2, and ABS3) still displayed unsatisfactory communalities.

In terms of validity, we found that the model linking student engagement negatively to burnout and positively to life satisfaction presented reasonable fit to the data, thereby lending support to our hypotheses. The findings are in coherence with Skinner and Belmont’s (1993) assertion that children who are engaged show continued behavioural involvement in learning activities in addition to positive emotional tone. In contrast, they assert that disaffected (opposite of engaged) children can be bored, depressed, anxious, or even angry about their presence in classroom. Additionally they can experience withdrawal from learning opportunities while being rebellious towards teachers and classmates [Skinner and Belmont, (1993), p.572]. The importance of the findings stands heightened, when it is considered that in the Indian context academic decline was found to be related to stress (Latha and Reddy, 2007). Consequently, the promotion of student engagement is expected to herald benefits to quality of life that are more fundamental than mere increases in school achievement (Newmann, 1992).

This research is not without its limitations. First, it is based on data from students of management of various institutions of India. While this research contributes to an understanding of the validity of UWES-S in Indian context, yet caution ought to be exercised in generalisation of results to other student groups and institution types. Thus, future research should seek to revalidate the measure in multiple samples drawn from varied student populations. Second, this study investigates student burnout and student life satisfaction as possible consequences of student engagement. While the results are in coherence with the proposed hypotheses, yet it is advisable to replace these with other variables in future research and seek additional evidence for predictive validity of the measure.
References


Student engagement in Indian context


