

# Measuring Employee Engagement: Utrecht Work Engagement Scale (UWES) or Intellectual, Social and Affective Scale (ISA)?

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## ABSTRACT

This study compares and examines two competing Employee Engagement measures identified in the academic literature by specifically examining their proposed factor structure and predictive validity. Using responses from 157 employees, results revealed significant differences between the two measures. Principal Component Analysis (PCA) identified the purported three dimensional structure for the ISA but the same was not supported for the UWES-9. Regression analysis indicated the UWES-9 performed slightly better in predicting Affective Commitment (AC) and Intention to Turnover (IT) indicating that of the two, the UWES – 9 is a better predictor of favourable work outcomes. The findings support the theoretical argument that, employee engagement measured by the ISA is a three dimensional construct. Nonetheless the UWES-9 predictive power was superior to that of the ISA. Overall, the study concludes that both measures are valuable in employee engagement research and would serve different purposes. The decision on which one to employ should therefore be based on the fit to the study.

**Keywords:** Employee Engagement. ISA, UWES-9,

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## INTRODUCTION

Employee engagement research has been promoted in both HR practice and academia given its association with positive organizational behaviour (Macey and Schneider, 2008). As the construct grew in popularity, it has undergone substantial developments on how it is defined, measured and conceptualized resulting in differing perspectives from both practitioner and scholarly literature (Zirgami, Nimon, Houson, Witt, and Diehl, 2009). Whereas the practitioners are concerned with desirable organizational outcomes, the academic perspective is concerned with clear and unambiguous definition of the construct together with its operationalization (Saks, 2006; Schaufeli, 2014). With growing academic interest, a number of measures derived from different theoretical backgrounds have been proposed (Wefald, Mills, Smith, and Downey, 2012). These measures include the UWES developed by Schaufeli and Bakker (2003) and the ISA developed by Soane, Truss, Alfes, Shantz, Rees, and Gatenby (2012). The UWES scale (Schaufeli and Bakker, 2003) is based on Maslach and Leiter (1997) theoretical approach which defines engagement as the antithesis of burnout. The UWES comes both as a 17-item scale and a shortened 9-item version. While various past studies investigated the psychometric properties of the UWES-17 research has not carried out investigation of the shorter nine item UWES-9 version (Mills, Culbertson, and Fulleger, 2012). The debate regarding the most appropriate employee engagement measure remains topical. Employee engagement in the workplace is not well known in developing countries (Ahanhanzo, Kittel, Paraiso, 2014). For example, no empirical information regarding employee engagement and its measures in Botswana has been published. Kim, Kolb and Kim (2013) documented the reliability of the UWES measure in studies across several countries. They

realised a majority of these studies were conducted in Europe. Based on this, they recommended expanding the use of the UWES and in particular the 9-item version to different cultural contexts which will increase inference from the research and build a stronger foundation of theory. In a similar vein, the ISA measure has not received much research attention especially in non-Western samples and exploring it in this context will be beneficial to employee engagement research. Very little effort have been made in scientifically testing Western management concepts into a body of knowledge for the purpose of guiding management practices in an African context (Gbadamosi, 2003). Exploring these concepts in non-Western settings is essential to theory building because of distinct cultural features between the settings (Barthelomew and Brown, 2012). For example, the communalistic nature of the African society.

Although there have been efforts to investigate the UWES measure, in particular the 17 item version in South African samples (Barkhuizen and Rothmann, 2006; DeBruin, Heill, Henn, and Muller, 2013; Coetzer and Rothmann, 2007; Storm and Rothmann, 2003), investigation of both the 9 item UWES measure and the newly constructed ISA measure still lack empirical evidence in an African sample. To date no study has examined these two measures side by side hence no evidence to determine which operationalizes the construct better or whether each captures different aspects of engagement. By investigating these two measures using a Botswana sample, this study provides a unique contribution to the employee engagement literature and provides insights for cross-cultural comparative research. It is important to ascertain how well Western developed models are applicable to non-Western samples in particular Africa, where workplace social attitudes are different from the West.

## **THEORETICAL BACKGROUND**

### **Definitions of employee engagement**

The first definition of engagement to appear in the academic literature was Kahn's (1990) who defined engagement as "the harnessing of organization members' selves to their work roles; in engagement people express themselves physically, cognitively and emotionally during role performances" (p. 694). Kahn (1990) outlined three psychological conditions to engagement influenced by individual differences as well as work context. First, individuals must sense meaningfulness in their work role (*psychological meaningfulness*). Secondly, they must feel safe to express themselves without fear (*psychological safety*). Lastly, they must feel they have personal resources necessary to engage (*psychological availability*). Building on Kahn's (1990) definition and prior engagement research (Macey and Schneider, 2008; May, Gilson, Harter, 2004; Rich, Lepine and Crawford, 2010), Soane et al. (2012) developed a model of engagement that has three requirements; *a work role focus, activation and positive affect*. They developed the ISA measure comprising of three facets, Intellectual, Social and Affective components. According to this model, intellectual engagement is defined as "the extent to which one is intellectually absorbed in work", affective engagement as "the extent to which one experiences a state of positive affect relating to one's work role and social engagement as "the extent to which one is socially connected with the working environment and shares common values with colleagues" (Soane et al., 2012, p. 532). By taking account of the social component of engagement this model recognises one of the features of Kahn (1990, p. 700) original conceptualization of engagement as an expression of behaviours that "promote connections to work and others" and "people become physically involved in tasks, whether alone or with others." People experience psychological meaningfulness when their task performances include rewarding interpersonal interactions with co-workers and clients. Such

connections are invaluable source in people's lives because they meet relatedness needs and allow people to feel known and appreciated thus sharing the journey with others (Kahn, 1990). Unlike the UWES, the ISA measure has however been the subject of very little empirical research. There were three studies identified which used the ISA measure: Soane et al. (2012); Alfes, Truss, Soane, Rees and Gatenby (2013); Rees, Alfes and Gatenby (2013). All the studies used UK based data sets and were conducted by its developers.

A number of empirical studies mostly based on the Job Demands Resource (JD-R) model have used the UWES as a measure of engagement (Bakker, Hakanen, Demerouti and Xanthopoulou, 2007; Brough, Timms, Siu, Kaliath, O'Driscoll and Cit, 2013; Xanthopoulou, Bakker, Demerouti and Schaufeli, 2009). Research findings have indicated a positive relationship between engagement and job resources (Bakker et al. 2007), while personal resources similarly relate positively to engagement (Xanthopoulou et al., 2009). Engagement has been associated with positive organizational outcomes such as organizational commitment and intention to turnover (Harter, Schmidt and Hayes 2002; Schaufeli and Bakker, 2004; Saks, 2006). Given these results, there are concerns in the literature that engagement is similar to earlier researched organizational behaviour constructs such as organizational commitment and evidence have been provided to support this view (Cole, Bedeian and O'Boyle, 2012; Newman, Joseph and Hulin, 2010; Wefald and Downey, 2009). This suggests engagement may be a redundant concept. Many scholars have however reported evidence that engagement is distinct from other similar constructs such as organizational commitment (Saks, 2006), job involvement (May et al. 2004), flow (Christian et al. 2011), job satisfaction (Wefald and Downey, 2009) and job embeddedness (Halbesleben and Wheeler, 2008). Research in this area however remains inconclusive and open to scientific scrutiny (Fletcher and Robinson, 2014).

### **Measures of employee engagement**

The two scales (UWES and ISA) have been developed based on proposed definitions on employee engagement described above. The psychometric properties of the UWES have been investigated among diverse samples in different countries. For example, Finland (Seppala, Mauno, Feldt, Hakanen, Kinnunen, Tolvanen and Schaufeli, 2009), United States (Mills, Culbertson and Fullegar 2012), Spain, Italy and Netherlands (Balducci, Fraccaroli and Schaufeli, 2010; Schaufeli and Bakker, 2003; Schaufeli et al., 2006), Japan (Shimazu, Schaufeli, Miyanaka and Iwata, 2010), Norway (Nerstad, Richardsen and Martinussen, 2010) and South Africa (Barkhuizen and Rothmann, 2006; Coetzer and Rothmann, 2007; DeBruin, Hill, Hen and Muller, 2013; Storm and Rothmann, 2003). Most of these studies revealed that the three factor structure of the UWES remained the same across samples. For example, Balducci et al. (2010) investigated the psychometric properties of the Italian version of the UWES-9, by using two samples Italian (n= 668) and Dutch (n=2213). Their results revealed the three factor structure of the UWES-9 was invariant across the two samples. Results from psychometric analysis with the UWES-17 identified the three factor structure fits well into the data of various samples from Netherlands (Schaufeli and Bakker, 2003; Schaufeli et al., 2002a), Spain (Schaufeli, Martinez, Marques-Pinto, Salanova and Bakker, 2002b), and South Africa (Storm and Rothmann, 2003). A student version of the UWES has also been developed based on the UWES-17 and was reported to be invariant across different countries (Schaufeli et al., 2002b). Shimazu et al. (2010) investigated the measurement accuracy of the Japanese (n=2339) and original Dutch (n=13, 406) versions of the UWES-9 and its comparability between both countries. On the whole, the UWES measure has been extensively validated. Schaufeli and Bakker (2010) states that the UWES engagement scale is available in 21 languages and an international data base exists that currently include engagement records of over 60 000

employees across the world. The accumulation of research findings has shown that this measure is reliable, stable and valid.

While the UWES has received the most attention in terms of development and research, there are challenges and limitations highlighted in the literature regarding its use suggesting further evaluation and revalidation of its appropriateness. Mills et al. (2012) argue that the methodology of its original scale development is flawed and has compromised its integrity and appropriateness from the outset. Shirom (2003) expressed concern with the high inter correlations among the three dimensions in particular between vigor and absorption. Recognizing those high correlations, Schaufeli et al. (2002b) explored a two factor dimensionality of engagement by collapsing the vigor and absorption dimensions into a single dimension and their solution provided a small but statistically significant goodness of fit indices compared to the three factor conceptualization. They maintained that a three factor structure is more appropriate and a high correlation between the two dimensions should be expected because of the nature of their relationship. Nonetheless, a number of empirical studies fail to support the three factor structure of the UWES-9. For example, Wefald et al. (2012) failed to support either a multi or uni dimensional factor structure for the UWES-9. Viljevac, Cooper-Thomas and Saks (2012) similarly found a weak support for a three dimensional structure of the UWES-9. Perhaps more significant is the work of Christian and Slaughter (2007) whose meta-analytic review of engagement research revealed the three factor engagement dimensions were highly correlated with correlations ranging from 0.88 to 0.95, suggesting possible multicollinearity between the dimensions.

With the competing ISA measure, Soane et al. (2012) examined its three factor structure. Principal Component Analysis showed that all items loaded strongly on the intended facets with standardized factor loadings of 0.73 for intellectual engagement, 0.60 for social engagement and 0.98 for affective engagement. The reliability of their engagement measure was strong for the overall construct ( $\alpha=0.91$ ) as well as for each dimension with alpha values of 0.90 for intellectual engagement, 0.92 for social engagement and 0.94 for affective engagement. Overall, there was substantial empirical support for the ISA. The ISA reliability and validity were further examined by considering the association between engagement and three organizationally important outcomes; task performance, organizational citizenship behaviour and turnover intentions. Their findings revealed that all the three dimensions were significant.

However, the ISA is still relatively new and therefore no other studies on its validity were identified. This lack of empirical research limits its approval as a reliable, stable and valid employee engagement measure. The table below presents the dimension of both measures with their individual items.

**Table 1. The UWES-9 and ISA measures dimensions and items**

UWES-9 (Schaufeli et al. 2006)	ISA (Soane et al. 2012)
Vigor	Intellectual
<ul style="list-style-type: none"> <li>• At my job I feel strong and vigorous</li> <li>• When I get up in the morning I feel like going to work</li> <li>• At work I feel bursting with energy</li> </ul>	<ul style="list-style-type: none"> <li>• I focus hard on my work</li> <li>• I concentrate on my work</li> <li>• I pay a lot of attention to my work</li> </ul>
Dedication	Social
<ul style="list-style-type: none"> <li>• I am enthusiastic about my job</li> <li>• My job inspires me</li> <li>• I am proud of the work that I do</li> </ul>	<ul style="list-style-type: none"> <li>• I share the same work values as my colleagues</li> <li>• I share the same work attitudes as my colleagues</li> <li>• I share the same work goals as my colleagues</li> </ul>
Absorption	Affective
<ul style="list-style-type: none"> <li>• I feel happy when I am working intensely</li> <li>• I am immersed in my job</li> <li>• I get carried away when I am working</li> </ul>	<ul style="list-style-type: none"> <li>• I am enthusiastic in my work</li> <li>• I feel energetic in my work</li> <li>• I feel positive about my work</li> </ul>

### **Hypothesis 1:**

- a). A three factor structure will be confirmed for the ISA measure.
- b). A three factor structure will be confirmed for the UWES-9 measure.

### **Affective Commitment**

Researchers have shown engagement to be a predictor of different forms of commitment in the workplace. For example, organizational commitment (Christian and Slaughter, 2007; Saks, 2006; Yalabik, Rossenberg, Kinnie and Swart, 2014), client, team and professional commitment (Yalabik et al. 2014). Extant studies have also clarified that employee engagement is theoretically distinct from commitment (Christian et al., 2011; Hallberg and Schaufeli, 2006). Meyer and Allen (1997) identified three forms of organizational commitment; *affective, continuance and normative*. A majority of research however concentrated on the affective commitment dimension because it has the largest impact on a number of vital organizational behaviour outcomes such as organizational citizenship behaviour, employee turnover and absenteeism and more stable over time (Gbadamosi, Ndaba and Oni, 2006).

Affective commitment reflects an employees' emotional attachment to, identification with and involvement with the organization, the idea being that employees with high affective commitment stay with the organization because they want to (Meyer and Allen, 1997). The relationship between commitment and engagement has been well researched and evidence suggests the two constructs are positively related (Saks, 2006; Yalabik et al., 2014). These studies used different engagement measures, for example Saks (2006) used a job engagement measure he developed whereas Yalabik et al. (2014) employed the UWES-9 measure. Both studies used the Meyer and Allen (1997) commitment measure. The findings from these studies revealed work engagement is a significant positive predictor of commitment and that the three work engagement dimensions have distinct and independent effects on commitment. To date no study has assessed how the ISA measure contributes to the prediction of important organizational behaviour outcomes such as commitment.

### **Intention to turnover**

In this study, we use Saks (2006) definition of turnover intention which is an employee's voluntary intention to leave. Harter et al. (2002) found out intention to turnover is related to employee engagement. Intention to turnover is an important HR outcome and many interventions are made based on it. Employees may decide to leave the organization due to a number of reasons. Some may leave due to reasons beyond the control of the organization whereas some may leave due to circumstances that can be controlled by the organization such as job fit, difficult supervisors, poor work climate .A number of research findings suggest a negative relationship between intention to turnover and employee engagement (Schaufeli and Bakker, 2004; Saks, 2006). Harter et al. (2002) found that engaged employees are less likely to leave the organization whilst Saks (2006) showed employee engagement is negatively related to intention to turnover. These studies used three different measures of engagement with Saks (2006) using the job engagement measure; Harter et al. (2002) use the Gallup 12 and Schaufeli and Bakker (2004) use the UWES scale. There is currently no evidence in the literature comparing the predictive validity of the UWES-9 measure with the ISA for important organizational behaviour outcomes hence the following hypothesis.

**Hypothesis 2:**

Compared with the UWES, the dimensions of the ISA will show a stronger relationship to a) affective commitment b) intention to turnover

## METHOD

### Participants and Procedure

Participants (N=157) were employed in five different professions from the fields of healthcare, teaching, banking, government ministry and hospitality resulting in five different organizations. The organizations were identified by personal contacts. Human Resource managers were approached and informed about the study. After managers expressed consent to participate 568 surveys were distributed to a segment of employees across the five organizations with 157 usable surveys returned resulting in 27.6% response rate. Information about the research was provided and voluntariness, anonymity and confidentiality of responses were emphasized. The number of participants in public and private sector organizations were 84 (54.5%) and 70 (39%) respectively. Three participants (6.5%) did not disclose the type of organization they work for. To encourage participation findings of the study was promised to the participating organizations and interested individual respondents. Ages ranged from 20 to over 50 years. The average tenure with the organizations was 3 years. A total of 119 (75.8%) of the employees had basic university degree and above. Female respondents were 101 (64.3%) and a majority were full time employees 144 (91.7%).

## MEASURES

### *Employee engagement*

Two employee engagement measures: the Utrecht Work Engagement Scale (UWES - 9), a three dimensional 9 item scale developed by Schaufeli et al. (2006) and ISA measure developed by Soane et al. (2012) were used to measure employee engagement. A sample item from vigour dimension of the UWES is '*at my work I feel like I am bursting with energy*', dedication '*I am enthusiastic about my job*' and absorption '*I am immersed in my work*'. For the ISA the three dimensions are intellectual, social and affective engagement and each dimension has three items. A sample item from Intellectual engagement is, '*I focus hard on my work*', for social engagement is, '*I share the same work values as my colleagues*' and for affective engagement, and '*I feel positive about my job*'. A five item scale where participants responded along a 5 point Likert interval 1 (*strongly agree*) to 5 (*strongly disagree*) was used. The English version of both scales was used and no translation was performed.

### *Affective commitment*

An eight item scale developed by Meyer and Allen (1997) was used to measure affective commitment. A five point Likert interval response scale from 1(*strongly agree*) to 5(*strongly disagree*) was used. A sample item is, '*I think I could easily become attached to another organization as I am to this one*'.

### *Intention to turnover*

A two item scale developed by Boroff and Lewin (1997) was used to measure intention to turnover. A five point Likert interval response scale from 1(*strongly agree*) to 5(*strongly disagree*) was used. A sample item is, ‘*during the next year I will probably look for a job outside this organization.*’

## RESULTS

**Table 2: Pearson correlations and descriptive statistics**

	Study Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10
1	UWES measure	2.24	0.86	<b>(0.91)</b>									
2	ISA measure	18.38	6.43	0.73	<b>(0.88)</b>								
3	Vigour (UWES)	2.32	1.01	0.89	0.64	<b>(0.87)</b>							
4	Dedication (UWES)	2.13	1.07	0.93	0.71	0.79	<b>(0.90)</b>						
5	Absorption (UWES)	2.27	0.88	0.77	0.52	0.48	0.58	<b>(0.72)</b>					
6	Intellectual (ISA)	1.66	0.75	0.58	0.77	0.47	0.54	0.49	<b>(0.88)</b>				
7	Social (ISA)	2.48	1.00	0.38	0.77	0.39	0.39	0.19	0.35	<b>(0.87)</b>			
8	Affective (ISA)	2.00	0.94	0.78	0.84	0.67	0.77	0.56	0.59	0.41	<b>(0.90)</b>		
9	Affective Commitment	2.88	0.70	0.48	0.41	0.45	0.43	0.36	0.31	0.27	0.37	<b>(0.84)</b>	
10	Intention to turnover	2.77	1.43	-0.52	-0.42	-0.52	-0.47	-0.35	-0.32	-0.24	-0.44	-0.59	<b>(0.57)</b>

Notes: All coefficients significant at  $p < 0.01$ . Cronbach’s reliabilities are along the diagonal in bold and parentheses

Table 2 presents the means, standard deviations and inter-correlations of the study variables. The correlation coefficient of the two engagement measures was 0.73 indicating significant overlap in what the two scales measure. As expected the six dimensions (three each from UWES and ISA) were positively correlated with coefficients ranging from 0.19 to 0.79. The correlations among the three dimensions of the UWES ranged from (0.48 to 0.79) while those among the three dimensions of the ISA ranged from (0.35 to 0.59) suggesting the UWES dimensions are more highly correlated among themselves compared to the ISA. There was weak evidence for a relationship between the ISA social dimension and all the UWES dimensions vigor ( $r = 0.39$ ), dedication ( $r = 0.39$ ) and absorption ( $r = 0.19$ ) confirming the social dimension of the ISA does not correlate strongly with any of the UWES dimensions. It would seem the dedication and vigor dimensions of the UWES are highly correlated ( $r = 0.79$ ) indicating the two dimensions could possibly be measuring the same thing. Between the two measures, the affective component of the ISA and the dedication component are also highly correlated ( $r = 0.77$ ) indicating employees with high affective engagement are likely to be absorbed in their work. There is also a strong correlation between the UWES dedication dimension and the ISA affective dimension ( $r = 0.77$ ) suggesting employees who are dedicated to their work roles are likely to have an emotional attachment to their jobs. A further inspection of the items reveals some overlap in the two dimensions. For example, an item in the dedication dimension of the UWES “I am enthusiastic with my job” is similar to an item in the affective dimension of the ISA “I am enthusiastic in my work”. A frequency analysis of the two questions revealed similarity in response as shown in table 2 below. Some respondents identified and communicated this similarity.

**Table 3 Frequency table of the UWES (vigor) item “I am enthusiastic with my job” and the ISA (affective) item “I am enthusiastic in my work”**

	<i>I am enthusiastic about my job</i>		<i>I am enthusiastic in my work</i>	
	Frequency	Percent	Frequency	Percent
strongly agree	56	35.7	58	36.9
agree slightly	43	27.4	50	31.8
neutral feeling	36	22.9	34	21.7
disagree slightly	13	8.3	11	7.0
strongly disagree	8	5.1	3	1.9
Total	156	99.4	156	99.4
Missing	1	0.6	1	0.6
Total		100.0	157	100.0

### Hypotheses testing

Based on the theoretical conceptualization of engagement and the empirical evidence it was expected the three factor model of engagement for both measures would be confirmed by the results of this study as suggested by Hypothesis 1. Principal Component Analysis (PCA) was used to extract the factors. PCA was used because it reduces data in such a way that a minimum number of factors account for the maximum proportion of the total variance represented in the set of items. Also it mathematically provides a concrete solution and follows psychometrically sound procedure (Tabachnick and Fidell, 1996). This was followed by Oblique rotation of factors using Oblimin rotation. Oblimin rotation is used in order to discriminate between factors since it effectively rotates factors such that items are loaded maximally to only one factor (Field 2013). The number of factors to be retained was guided by two decision rules. Kaiser’s criterion (Eigen values >1) and inspection of the scree plot. Only factors with Eigen values greater than 1 were retained.

*Hypothesis 1a:* A three factor structure will be confirmed for the UWES-9 measure of engagement.

**Table 4. Principal Component Analysis for the UWES measure**

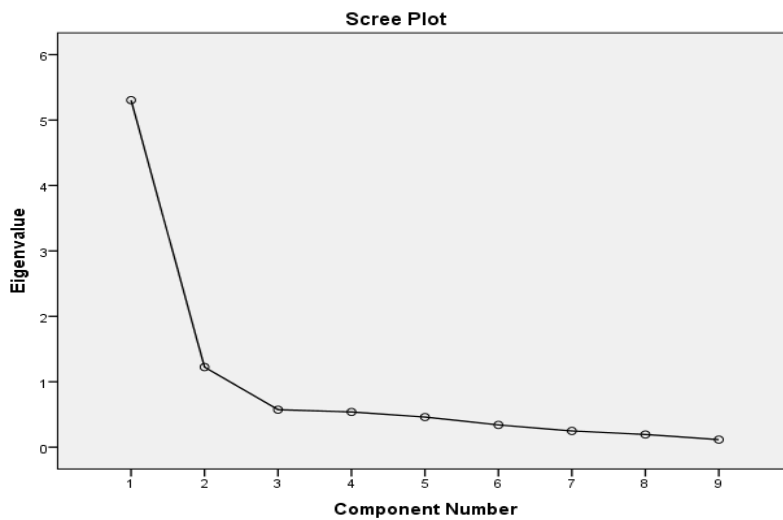
Rotated Component matrix	Component	
	1	2
I am enthusiastic about my job	0.909	
My job inspires me	0.851	
At my job I feel strong and vigorous	0.840	
I am proud of the work that I do	0.819	
When I get up in the morning I feel like going to work	0.817	
At work, I feel bursting with energy	0.783	
I feel happy when I am working intensely	0.743	
I am immersed in my job	0.610	0.590
I get carried away when I am working	0.415	0.771

Note: Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization



Figure 1. Scree plot for the PCA for the UWES scales



The Kaiser-Meyer-Olkin (KMO) value is 0.88 and Barlett Test of Sphericity value is significant at ( $p=0.000$ ), therefore factor analysis is appropriate. Principal component analysis revealed two Eigen values exceeding 1, 5.304 and 1.224 respectively. The items resulted in a two factor solution explaining 58.94 % and 13.60 % of the variance respectively. They explained a total of 72.54 % of the variance. The point of inflexion on the scree plot tails off after two factors justifying a two factor structure for the UWES-9. However, this two factor solution is not good since the second factor has a relatively poor loading indicating that the one dimensional structure could possibly be a good fit for UWES-9 for this data set. Overall these results from our dataset did not support the three factor structure of the UWES-9 proposed by Schaufeli et al. (2006). Some earlier studies had also failed to replicate the three factor structure (Shimazu, Schaufeli, Kosugi, Suzuki, Nashiwa, Kato, Sakamoto, Irimajiri, Amano, Hirohata and Goto 2008; Sonnentag, 2003). Bakker et al. (2007) suggests this could be attributed to translation problems. Schaufeli et al. (2006) argue the overall score of engagement may be more useful in empirical research than the scores on the three separate dimensions of the UWES-9. The UWES measure however remains the mainstay of empirical work on engagement and has been validated across countries and cultures. The results for its factorial validity have been largely consistent with exception of a few studies (Shimazu et al., 2009; Viljevac et al., 2012; Wefald et al. 2012). Although Storm and Rothman (2003) confirmed a three factor model in a South African police sample the three factor model fitted their data only after removing two items ‘At my work I feel strong and vigorous’ and ‘I get carried away when I am working’, the three factor structure proposed by Schaufeli et al. (2002b) was not self-evident in their sample.

*Hypothesis 1b:* A three factor structure will be confirmed for the ISA measure of engagement.

Table 5. Principal Component analysis for the ISA measure

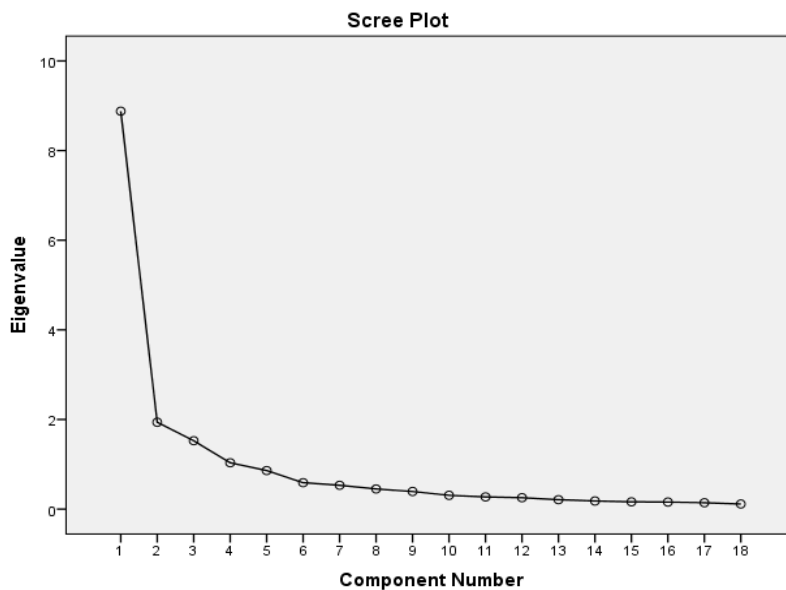
Rotated component matrix	Component		
	1	2	3
I focus hard on my work	0.952		
I concentrate on my work	0.916		
I pay a lot of attention to my work	0.760		
I share the same work values as my colleagues		0.897	
I share the same work attitude as my colleagues		0.889	

I share the same work goals as my colleagues	0.873
I am enthusiastic in my work	-0.950
I feel energetic in my work	-0.905
I feel positive about my work	-0.856

Note: Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

Figure 2. Scree plot for the PCA for the ISA scales



The KMO value is 0.84 and Barlett Test of Sphericity value is significant at ( $p=0.000$ ), therefore factor analysis is again appropriate. The first three factors extracted recorded Eigen values of 4.69, 1.66 and 1.03 respectively. The items resulted in a three factor solution explaining 52.21%, 18.49% and 11.42% of the variance respectively. They explained a total of 82.12% of the variance. The scree plot further supported the three factor structure of the ISA engagement measure since the point of inflexion tails off at the fourth factor. Overall the three factor structure of the ISA proposed by Soane et al. (2012) was supported. The internal consistencies were computed and findings revealed the dimensions were internally consistent with the alpha coefficients of 0.88, 0.87 and 0.90 for Intellectual, Social and Affective dimensions respectively. The internal consistency for the ISA one model factor was 0.88 which is comparably similar to that of the dimensions.

Ordinary Least Squares (OLS) regression was used to examine the relative importance of all the dimensions of engagement towards predicting affective commitment and turnover intentions. In addition to the regression coefficients,  $R^2$  (coefficient of determination) were computed to give the proportional variance of the overall composite measures for both the UWES-9 and ISA in explaining the outcome variables

**Table 6: OLS regression results for UWES engagement measure using affective commitment as dependent variable.**

DV: Affective Commitment					
IV	$\beta$	SE( $\beta$ )	R <sup>2</sup>	Adj R <sup>2</sup>	F
Uwes-9overall	0.586	0.087	0.23	0.22	45.399
Vigor	0.641	0.107	0.19	0.18	30.028
Dedication	0.753	0.114	0.22	0.21	43.969
Absorption	0.481	0.091	0.14	0.13	23.860
ISA overall	0.404	0.075	0.16	0.15	28.692
Intellectual	0.336	0.083	0.10	0.09	16.397
Social	0.382	0.111	0.07	0.06	11.760
Affective	0.051	0.101	0.14	0.13	24.823

All coefficients significant at P<0.001 Note: IV is independent variable and DV is dependent variable.

Table 6 shows the OLS results using affective commitment as the dependent variable. If the ISA greater predictive power argument is correct then the dimensions of the ISA measure should result in greater accounted for variance (R<sup>2</sup>) than the UWES measure.

Compared to the ISA dimension, the UWES-9 dimensions explain more variance in predicting affective commitment with R<sup>2</sup> values of 20% (vigor), 22% (dedication) and 14% (dedication) compared to the R<sup>2</sup> of the ISA dimensions with 10% (intellectual), 7% (social) and 14% affective commitment. For the overall composite measure the UWES-9 explains 23% of the variance in affective commitment whereas the ISA measure explains 16% showing that the UWES has a greater predictive power over the ISA in predicting affective commitment. Among the three ISA dimensions, the affective dimension appears to have more predictive power for affective commitment compared to intellectual and social dimensions.

**Table 7: OLS regression results for UWES engagement measure intention to turnover as dependent variable**

DV : Intention to turnover					
IV	$\beta$	SE( $\beta$ )	R <sup>2</sup>	Adj R <sup>2</sup>	F
UWES-9 overall	-0.312	0.041	0.27	0.26	57.127
Vigour	-0.367	0.049	0.27	0.26	55.761
Dedication	-0.351	0.054	0.22	0.21	42.813
Absorption	-0.219	0.047	0.13	0.12	22.105
ISA overall	-0.205	0.037	0.17	0.16	31.628
Intellectual	-0.167	0.040	0.10	0.09	16.984
Social	-0.167	0.054	0.06	0.05	9.499
Affective	-0.285	0.048	0.19	0.18	35.926

All coefficients significant at P<0.005 Note: IV is independent variable and DV is dependent variable.

Table 7 shows the OLS results using intention to turnover as the dependent variable. Similarly the results show compared to the ISA dimensions, the UWES-9 dimensions explain more variance in predicting intention to turnover with R<sup>2</sup> values of 27% (vigor), 22% (dedication) and 13% (absorption) compared to ISA dimensions with 10% (intellectual), 6% (social) and 19% (affective). For the composite overall measures, the UWES-9 still explains more variance than the ISA with R<sup>2</sup> = 27% compared to 16% for the ISA.

These results suggest the predictive power of the UWES is higher than that of the ISA for this study thereby rejecting H2. This finding contradicts Soane et al. (2012) contention that the ISA measure has strong explanatory power in predicting outcomes compared to the UWES-9. The opposite seems to hold true in the present study and sample.

The UWES-9 measure on the other hand demonstrated comparably stronger predictive power but its three factor structure was not supported.

## DISCUSSION

Due to its association with improving business results employee engagement has been regarded as a critical issue by both academics and practitioners (Harter et al. 2002; Kular, Gatenby, Rees, Soane, and Truss, 2008). As the interest in the construct grew, so has the need to measure and evaluate its levels in organizations. A number of measures have been developed based on different theoretical approaches. This study assessed and compared the psychometric properties of two popular measures of employee engagement (Schaufeli et al., 2006: UWES-9) and (Soane et al., 2012: ISA) emerging in the academic literature in terms of proposed factor structure and predictive validity.

Findings for this study indicated that similar to Storm and Rothmann (2003) a one dimensional structure for the UWES-9 better fits the data. The high internal reliabilities of the UWES-9 dimensions, vigor (0.87), dedication (0.9) and absorption (0.72) confirm the overall reliability of the UWES-9 dimensions. This is consistent with other studies (Schaufeli and Bakker, 2010; Schaufeli et al., 2002b; Storm and Rothmann, 2003). However, the internal reliability for the composite UWES-9 measure was 0.91 which is considerably higher than that of the ISA at 0.88 for this data set. This is similar to Alok (2013) findings study conducted in an Indian sample which revealed that the three factor structure did not fit for the UWES-9 did it may be more appropriate to consider engagement as a single factor construct. Failure to support the UWES-9 three factor structure suggests there is little to be gained by interpreting individual dimensions when using the UWES-9, indicating that a single composite score across the items is preferable. On the other hand, the ISA measure demonstrates a three factor model suggested by Soane et al. (2012). It is however difficult to conclude on its legitimacy as there are few empirical studies testing its psychometric properties and critical examination of its dimensions and none from samples outside of the UK and originators in the literature. However, these findings may be significant for engagement theory as the study showed dimensions of the ISA appear to behave according to the theory.

While this is a promising finding, until further studies show factorial validity of the ISA, it may be more appropriate to be cautious of its use in predicting antecedents and consequences of employee engagement. The results further show although the predictive power for the ISA appears to be lower for affective commitment and intention to turnover, its three factor structure was supported. The UWES-9 measure on the other hand demonstrated comparably stronger predictive power but its three factor structure was not supported. Both measures demonstrate a unique strength and therefore are valid to measure the construct even though the overwhelming evidence in academic research employs the UWES-9 measure. Although the UWES-9 measure has a stronger predictive power, scholars have raised concerns about its independence from measures of burnout (Cole et al., 2012). Cole et al. (2012) meta-analytic findings revealed dimensions of burnout and engagement are highly correlated suggesting that the two constructs are not independent constructs. On the basis of their results, they advised researchers to avoid treating the UWES as if it were measuring a distinct phenomenon. Furthermore, the UWES-9 measure fails to operationalize Kahn's (1990) original conceptualization of engagement given that its origin and foundation rests within the burnout literature (Cole et al., 2012). Kahn (1990) conceptualization of engagement was developed out of research procedures which lead to the emergence of a theory and not founded from any existing construct. On the other hand the ISA measure builds onto Kahn's (1990) theorizing and based on their findings Soane et al. (2012) suggested that the ISA could be more useful in relation to predicting individual level behavioural outcomes. Soane et al. (2012) further identified the social component of engagement suggested by Kahn (1990) as the perceived social connectedness between the individual and their coworkers.

## LIMITATIONS

First, this study used cross sectional and self-report data limiting the conclusions that can be made about causality. Longitudinal studies are required to reach stronger conclusions about causal effects. Second, the sample is heavily skewed with respect to high education level with 78.5% possessing basic university education or higher. However, given the nature of the measuring items translations to include a sample with lower education would have been problematic hence this sample was appropriate.

## CONCLUSION

In conclusion, the present study concurs with Saks and Gruman (2014) suggestion that engagement research moves away from reliance on the UWES-9 and begin to use measures that are more in line with Kahn's (1990) original conceptualization. Added to the ISA, May et al. (2004) engagement measure and Rich et al. (2010) job engagement measures map onto Kahn's (1990) conceptualization. To researchers exploring engagement in organizational contexts, the ISA measure could be superior to the UWES-9. Its superiority lies in the fact that it emphasizes meaningful connection to other employees which is remarkable since team work play a crucial role in employee wellbeing (Torrente, Salanova, Llorens, and Schaufeli, 2012). In most organizations, performance is the result of the combined effort of individual employees in groups or teams in the form of department or units. It is therefore important that connection to other employees is critical. When teams work badly, they can affect even the most engaged employee from realizing their potential. Therefore the extent to which one is socially connected with the working environment and share common values with colleagues becomes imperative. The ISA measure is therefore recommended as an alternative to the UWES-9, especially in organizational settings. Although the three factor structure of the UWES-9 was not confirmed, it was a better predictor of work outcomes compared to the ISA suggesting that the UWES-9 is a stronger measure in predicting affective commitment and intention to turnover.

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