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RESEARCH ARTICLE

Construct validity of the IWP Multi-Affect Indicator scale in Romanian work environment

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Abstract

The purpose of this study was to investigate the construct validity of the IWP Multi-Affect Indicator scale. A questionnaire was administered to an occupationally heterogeneous sample of 341 employees. Confirmatory factor analysis (CFA) was used to determine the factor validity of the questionnaire. We employed network analysis as a novel approach to elucidate differential relationships involving the IWP Multi-Affect Indicator's four-factor structure. CFA results revealed satisfactory model fit, ,best represented by a 4-factor model for the Romanian sample, while network analysis confirmed the relationships between items and factors. We have concluded that this questionnaire is suitable to measure differentiated core affects among Romanian employees.

Keywords

IWP Multi-Affect Indicator; Core affect, Circumplex model, Confirmatory factor analysis.

Introduction

Well-being in the workplace has been of growing interest amongst Romanian researchers and practitioners. Accordingly, it is important to determine the validity of measures related to well-being. Researchers outside of Romania continue to investigate the validity of well-being scales among individuals in various contexts. From this information, we can compare their well-being scale models with Romanian datasets and assess their validity, Cross-cultural comparisons of this sort are important. The number of international research studies on well-being is steadily increasing and well-being is in part culturally relative culture (Veenhoven, 2012). Therefore, studies need to continue to focus on cultural validity characteristics of these measures.

The various conceptualizations of well-being have led to several specific approaches toward its assessment. Most approaches typically investigated measurable affects, especially in the work environment. Measuring job-related affects is important, along with taking into account the central aspect of emotions including the well-being, superseding cognitive, social, and psychosomatic dimensions (Van Horn,

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Taris, Schaufeli, & Schreurs, 2004). Throughout the last six decades of research on the psychology of emotions, several measures have been proposed (e.g., Burke, Brief, George, Roberson, & Webster, 1989; Daniels, 2000; Van Katwyk, Fox, Spector, & Kelloway, 2000; Watson, Clark, & Tellegen, 1988). However, few of these measures focus on feelings experienced in a specific context, such as that of work, rather than in general settings (Burke et al., 1989; Daniels, 2000; Daniels, Brough, Guppy, Peters-Bean, & Weatherstone, 1997; Daniels & Guppy, 1994; Hosie & Sevastos, 2010; Madrid & Patterson, 2014).

This limitation of earlier measures was recognized by Warr (1990b), who built the first measure of work-related core affect based on the circumplex model of emotions (Russell, 1980). The Multi-Affect Indicator is a sixteen adjectival item scale that has been further studied in work and organizational contexts (Bindl, Parker, Totterdell, & Hagger-Johnson, 2012; Warr, Bindl, Parker, & Inceoglu, 2014).

Taking in consideration the need, interest and lack of research on the IWP Multi-Affect Indicator scale, the purpose of this study is to establish the construct validity of the IWP Multi-Affect Indicator scale in Romanian work environments using Confirmatory Factor Analysis (CFA) and Network Analysis.

The theoretically-based structure of the Multi-Affect Indicator

Four major theoretical pillars support the Multi-Affect Indicator designed by Warr and colleagues (2014b) these are: (a) the dimensionality approach of the emotional structure, (b) mapping emotions to organizational outcomes, (c) context-specific flexibility, (d) conceptual purity by focusing solely on core affect. The four approaches are briefly discussed below.

The dimensionality approach of the emotional structure. The major common approach to define emotional structure with the dimensional approach, which states that human emotions can be identified based on three dimensions, such as "pleasurable vs. unpleasureable", "arousing vs. subduing" and "strain vs. relaxation" (Wundt, 1897) or "pleasantness vs. unpleasantness", "attention vs. rejection" and "level of activation" (Schlosberg, 1954). Generally, the two broad dimensions, arousal and valence, have been identified using factor analysis and multidimensional scaling techniques (Russell, 1980). As emotions cluster at the axis, it forms a circular pattern around the dimensions leading to a circumplex model (Darbyshire, Bell, & McDonald, 2006).

The underlying principle of the emotional circumplex model is that emotions are by their nature bipolar: cheerful vs. sad, nervous vs. relaxed, etc. (e.g., Larsen & Diener, 1992; Russell, 1980; Russell & Carroll, 1999; Watson & Tellegen, 1985, 1999). The closer two emotions are at the perimeter, the more similar they are (Figure 1). For example, "excited" and "aroused" are more similar than "content" and "aroused."

This approach was pioneered and most widely used by Russell (1979, 1980) in several settings such as assessing couple and family dynamics (Olson, 2000) in affective disorders (Posner, Russell, & Peterson, 2005), and in findings from behavioral, cognitive neuroscience, neuroimaging, and developmental studies of affect (Posner et al., 2005).

Figure 1. The circumplex original model of affect. The circumplex model describes affect in terms of the two orthogonal dimensions of valence and activation. Adapted from "A Circumplex Model of Affect", by J. A. Russell, 1980, Journal of Personality and Social Psychology, 39, p. 1168.

In the workplace c, the circumplex model of emotions was first adopted by Warr (1987, 1990), later by Paul Spector (Van Katwyk et al., 2000) and then theoretically employed by Bakker & Oerlemans (2011).

Warr (1987) has suggested that three main axis should be considered: (1) displeasure-pleasure, (2) anxiety-contentment or comfort as relabeled by Warr (1994), and (3) depression-enthusiasm (Figure 2). This approach to affective well-being has emerged as being important in non-occupation research and has been empirically examined through parallel measures in both work and non-work-related settings (Warr, 1990).

The combination these axis gives rise to four distinct quadrants: The linear combination of dimensions describes four affective quadrants which in organizational behavior are labeled as: HAPA (high-activated positive affect or "Enthusiasm") situated in top-right quadrant, HANA (high-activated negative affect or "Anxiety") situated in top-left quadrant, LAPA (low-activated positive affect or "Comfort") located in bottom-right quadrant, and LANA (low-activated negative affect or "Depression") (Warr, Bindl, Parker, & Inceoglu, 2014). This descriptive model displays (excellent fit with several organizational behaviours) substantive explanatory power for several organizational behaviors (Yik, Russell, & Steiger, 2011).

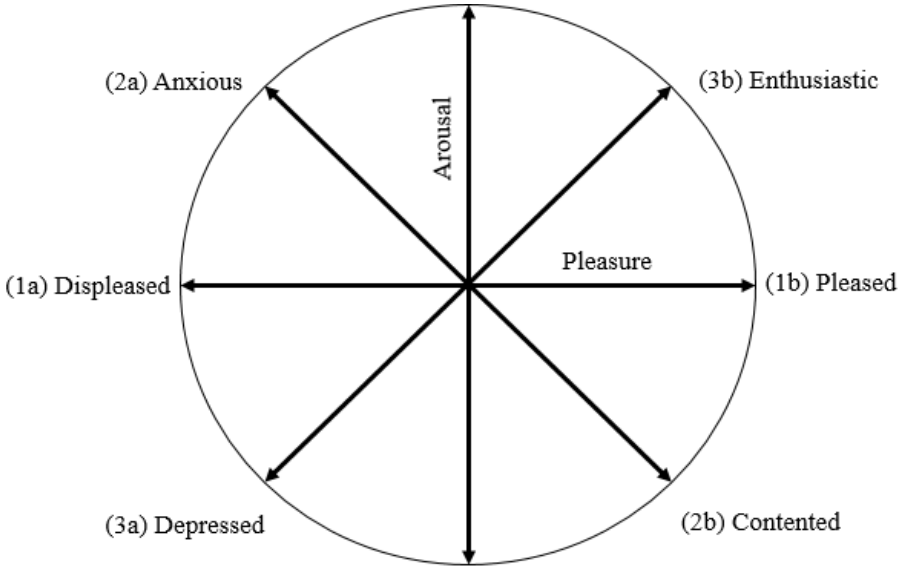

Figure 2. The three-main axis structure consisting of: (1) displeasure-pleasure, (2) anxiety-contentment, and (3) depression-enthusiasm. Adapted from "The measurement of well-being and other aspects of mental health", by P. Warr, 1990, Journal of Occupational Psychology, 63, p. 195.

Mapping emotions to organizational outcomes. This model/map can be applied to the workplace environment and quadrant equally important as each one is related to different outcomes. Extrapolated into the work domain, the study of emotions in each quadrant is important, as each one is related to different outcomes. For example, HAPA is related to creativity and proactivity, HANA is associated with counterproductive behavior, LAPA is linked to proficiency at work, while LANA relates to disengaged actions such as organizational silence (Dyne, Ang, & Botero, 2003; Parker, Bindl, & Strauss, 2010; Spector & Fox, 2002);

The scarcity of instruments that measure affect at work is described by the combination of the full range of dimensions and is still a significant limitation in research (Madrid & Patterson, 2014). The majority of studies on affective states at work have been conducted by instruments like Positive Affect and Negative Affect Schedule (PANAS, Watson et al., 1988), which covers only the positive and negative feelings high in activation (HAPA and HANA). In industrial and organizational psychology, the circumplex model has also been only partially investigated. For instance, the first axis (displeasure-pleasure) has mostly been operationalized through measures of job satisfaction, job attachment, and organizational commitment. The second axis (anxiety-comfort) is usually tapped through measures of job-related anxiety, tension, and strain. The third axis (depression-enthusiasm) is assessed by such measures as occupational burnout, job-related depression, boredom, and fatigue (Schaufeli, 2013).

Context-specific flexibility. Affective well-being refers to feelings about either life in general ("context-free"), or job-related affects in the work domain. Unlike other models of emotions (e.g., PANAS model, PAD emotional state model, Ryff model, etc.) (Warr, 1987, 1994) focused on well-being in a particular context. The advantage of conceptualizing well-being as job-specific rather than a context-free phenomenon is that relationships with job-related antecedents are stronger for job-related well-being, thus potentially offering a better understanding of how a particular work characteristic affect

employees' well-being (Hosie & Sevastos, 2010; Warr, 1987, 1994). Furthermore, the instruments based on context-free evaluation are very broad, including the rating of emotions that are not extensively related to occupational research (e.g., ashamed, guilt, etc.) (Warr, 1990).

The Multi-Affect Indicator was intended to measure both job-related and context-free well-being, depending on the instruction given (phrasing). In the job-related version, the respondent is asked to evaluate how frequently their job made them feel about certain feelings during the past two weeks. The target period can be altered for particular purposes by modifying instructions accordingly. The affect-descriptors of Multi-Affect Indicator were selected by authors from previous publications of organizational research (e.g., Burke et al., 1989; Remington, Fabrigar, & Visser, 2000; Russell, 1980; Watson & Tellegen, 1985) and were reduced from initially 28 affective descriptors to 16 affective indicators.

Conceptual purity by focusing solely on core affect. The response scale of the Multi Affect Indicator consists of eight positive ''primitive, universal, and simple'' core affects (e.g., calm, contented, relaxed, etc.) and eight negative (e.g., tense, uneasy, worried, etc.) (Warr et al., 2014b).

The Multi Affect Indicator scales denies items based on concepts that directly refer to discrete emotions (e.g. proud, anger) and attitudes (e.g. satisfaction), in order to examine only the basic dimensions of affective states and improving the limitations of similar job-related affective scales (e.g., JAWS, Van Katwyk et al., 2000; PANAS, Watson et al., 1988).

Empirical evidence of the factor structure

Studies investigating the factor structure of the job-related affective well-being scale have for the most part empirically explored the 12-item version. The most recent version consisting of 16 items, was applied by Madrid and Peterson (2014) to two samples of English and Spanish workers. However, only 12 items showed greater goodness of fit and were retained by the authors. "Hopeless" and "nervous" indicated problems of misspecification associated with error covariance related to other items of their respective factors in both samples.

These items were removed along with the items with the lowest factor loadings for Highly-Activated Positive Affects (HAPA) and Low-Activated Pleasant Affects (LAPA), to define an instrument with an even number of items for all its four factors (Madrid & Peterson, 2014).

Principal component analysis on the 12-item version had resulted in two, three, or four-factor solutions. Within a broad cross-section of 1686 workers of different professions, Warr (1990b) investigated a two factor solution, in which the six items "tense", "anxious", "worried", "calm", "comfortable", and "relaxed" compose the anxiety-comfort factor and "depressed", " melancholic", "unhappy", "motivated", "enthusiastic", "optimistic" establish the depression-enthusiasm factor. Sevastos, Smith and Cordery (1992) tested on 3044 civil servants and white collar workers a single-factor model and a two orthogonal factor model with the latter model showing better adjustment than the single-factor model. This same structure was later replicated by Daniels and Guppy (1994) and Cifre and Salanova (2002).

Confirmatory factor analysis by Daniels and colleagues (1997) across two samples indicates that the three-factors structure offers a complete description of the factor structure of Warr's measures of work-related affective well-being. These factors converge with Watson & Tellegen's model of mood (1985) and represent negative affect (tense, worried, anxious, calm and relaxed), positive affect (enthusiasm and optimism) and depression-pleasure (comfortable, motivated, depressed, melancholic and unhappy).

The results of the confirmatory factor analysis from other studies (Gonçalves & Neves, 2011; Madrid & Patterson, 2014; Mäkikangas, Feldt, & Kinnunen, 2007; Warr, 1990) concluded that the four-factor solution showed a better approximation with the gathered data than the alternative models.

The Present Study

Being an exploratory design, the present research paper determines which of the two factor structures best fit the evidence on construct validity of the Romanian form of the IWP-Multi-Affect Indicator scale, on Romanian participants.

Based on the existing evidence of studies investigating the factor structure of IWP Multi-Affect Indicator scale, the purpose of this study is to test the 4-factor structure and 2-factor structure of the 16-items IWP Multi-Affect Indicator scale (Warr et al., 2014b) on a Romanian sample. To determine the degree of construct validity, two different statistical approaches are called upon. First, a structural Equation Modelling is used as it offers coefficient fits necessary to determine the approximation of data on the given sample. Confirmatory factor analysis is also employed to test whether the items load sufficiently the 4-factor and 2-factor models. Second, as relations between items is best represented through network analysis, it is highly appropriate to use this when determining the centrality of items within their factors. Network analysis is a newer methodological approach which helps us map and visualize relationships between nodes, represented in our case as affective descriptors. Relationships pictured as more intensive ("thicker") between nodes, are more representative of a specific dimension. For the present study, network analysis is used to visualize the closeness of affective descriptors for the four quadrants (i.e., HANA, HAPA, LANA and LAPA). It is therefore important to highlight the factor structure that shows a better approximation with our data and compare these results with those reported in the literature, for other studies.

Based on previous research, three models were tested using confirmatory factor analysis. The 3-factor model cannot be approached as the 12-items used by Daniels and colleagues (1997) do not resemble the 16-items used by Warr and colleagues (2014) in developing the IWP Multi-Affect Indicator scale.

The first model (M1) supports a model with four correlated factors: anxiety (HANA), comfort (LAPA), enthusiasm (HAPA) and depression (LANA), which are assumed to represent the four quadrants of emotional-affective states sized by Warr (1990b). This factor structure has also shown proper adjustment in a longitudinal study at both time points (Mäkikangas et al., 2007). This model will be used as a basis for comparison with the other models.

The second model (M2), a correlated two-factor model is proposed to investigate whether the scale would fit the dimensions of negative and positive affects found in the literature discussed earlier (Cifre & Salanova, 2002; Daniels et al., 1997; Daniels & Guppy, 1994; Sevastos et al., 1992; Warr, 1990a).

Both models were assessed using Confirmatory Factor Analysis and Network Analysis, employing the R statistical software (R Core Team, 2016).

Method

Participants and procedure

The study sample consisted of 341 professionals (82.4% women and 17.6% men) from distinct occupational sectors: sales (6.75%), human resources (11.14%), psychology (13.48%), teaching (5.86%), law (1.17%), economy (6.45%), engineering (5.57%), research (2.34%), IT (4.69%), public relations (10.55%), hospitality (7.33%), medicine (7.03%) and others unspecified (22.33 %) in which 62.17% of occupational sectors being from private institution. Educational level varies as it follows: post graduate (33.61%), graduate (51.19%) and high school (15.2 %). The age of participants varies: 53.1 % (aged between 18 and 27 years old), 26.7 % (28–37 years old), 14.1 % (38–47 years old), 5.6 % (48–57 years old) and 0.6% of the participants were older than 58 years old.

Data was collected with the help of Google Forms, an online survey gatherer. The inclusion criteria were based on the age of the respondents (≥ 18 years old) conducting professional activities. No personal data has been retained after the survey ended.

Measure

Affective well-being at work. The IWP Multi-Affect Indicator scale contains 16 items

proposed by Warr (1990a) to measure affective well-being at work according to the conceptualization already outlined. The participants' task was to indicate to what extent their job had made them experience any of those feelings over the past weeks on a Likert scale ranging from 1 (never) to 6 (always). The internal consistency indices of the four quadrants (HANA, HAPA, LANA, LAPA) are .91, .90, .88, .78, showing acceptable reliability. A summary of the reliability analysis is displayed in Table 1.

Table 1. Reliability analysis of the IWP Multi-Affect Indicator and its four quadrants

Scale	Items	Cronbach's α	*M*	*SD*	Cronbach's α if Item Deleted
HANA		.91	14.02	6.40	
	Anxious				.90
	Nervous				.88
	Tense				.89
	Worried				.89
HAPA		.90	12.66	5.71	
	Enthusiastic				.87
	Excited				.85
	Inspired				.88
	Joyful				.89
LANA		.88	10.23	5.60	
	Dejected				.87
	Depressed				.84
	Despondent				.84
	Hopeless				.86
LAPA		.78	12.91	4.45	
	At ease				.81
	Calm				.70
	Laid-back				.73
	Relaxed				.67

Statistical Approach

The R statistical software was used to conduct confirmatory factor analysis for both models. Goodness-of-fit indicators were computed in R using the lavaan package (Yves, 2012) and semPlot for the diagram (Epskamp, 2014) in order to obtain coefficient fits to help confirm the approximation of the two models. The hypothesized four-factor model (M1) consisted of the following factors: Highly-Activated Negative Affects (HANA, anxious, nervous, tense and worried), Highly-Activated Positive Affects (HAPA, enthusiastic, excited, inspired and joyful), Low-Activated Pleasant Affects (LAPA, at ease, calm, laid-back and relaxed) and Low-Activated Negative Affects (LANA, dejected, depressed, despondent and hopeless). Another model was tested (M2) and consisted of the latent factors of positive affects (HAPA and LAPA) and negative effects (HANA and LANA). Network analysis was conducted in R with the help of the qgraph package (Epskamp, Cramer, Waldorp, Schmittmann, & Borsboom, 2012) to underline the centrality of nodes (items).

Results

Mean and standard deviations are displayed in Table 2 and the item correlation matrix in Table 3.

Table 2. Descriptive statistics

		IWP Multi-Affect Indicator scores															
		HANA				HAPA				LANA				LAPA			
Age group	*N*	*M*	*SD*	Skewness	Kurtosis	*M*	*SD*	Skewness	Kurtosis	*M*	*SD*	Skewness	Kurtosis	*M*	*SD*	Skewness	Kurtosis
18-27	181	16.05	6.20	-0.16	-0.93	11.00	5.43	0.64	-0.20	10.68	5.77	0.75	-0.09	12.50	4.80	0.49	0.18
28-37	91	12.07	5.76	0.87	0.30	14.95	5.45	-0.21	-0.75	9.62	5.02	0.99	0.72	13.07	4.16	0.16	-0.62
38-47	48	10.13	5.34	0.77	-0.46	13.68	5.66	0.27	-0.76	8.92	4.98	0.88	-0.29	13.45	4.08	-0.09	-0.11
48-57	19	13.68	6.33	0.05	-1.38	15.05	4.82	-0.43	-0.65	11.79	7.20	0.59	-1.28	14.68	2.49	0.01	-0.73
58+	2	16.50	10.60	-	-	11.00	7.07	-	-	14.00	8.48	-	-	11.00	4.24	-	-
Total	341	14.02	6.40	0.23	-1.00	12.65	5.71	0.26	-0.82	10.23	5.60	0.84	0.00	12.90	4.45	0.27	0.17

Note. HANA (High-Activation Negative Affects); HAPA (High-Activation Positive Affects); LANA (Low-Activation Unpleasant Affects); LAPA (Low-Activation Pleasant Affects).

Table 3. Table of correlations

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	HANA																				
2	HAPA	-.52																			
3	LANA	.69	-.40																		
4	LAPA	-.48	.60	-.32																	
5	Anxious	.87	-.46	.52	-.41																
6	Nervous	.92	-.48	.66	-.44	.72															
7	Tense	.90	-.49	.66	-.49	.66	.83														
8	Worried	.90	-.44	.64	-.37	.74	.75	.74													
9	Enthusiastic	-.45	.89	-.30	.55	-.40	-.42	-.42	-.37												
10	Excited	-.52	.91	-.41	.49	-.44	-.47	-.48	-.47	.77											
11	Inspired	-.37	.87	-.31	.50	-.38	-.32	-.33	-.30	.72	.71										
12	Joyful	-.50	.86	-.39	.57	-.39	-.50	-.49	-.41	.65	.73	.64									
13	Dejected	.66	-.38	.85	-.31	.56	.63	.61	.56	-.30	-.39	-.30	-.35								
14	Depressed	.55	-.31	.88	-.25	.38	.52	.53	.52	-.21	-.31	-.21	-.35	.66							
15	Despondent	.65	-.39	.89	-.32	.49	.61	.63	.60	-.31	-.37	-.33	-.35	.68	.72						
16	Hopeless	.53	-.31	.84	-.22	.36	.52	.51	.52	-.21	-.34	-.24	-.30	.58	.69	.68					
17	At ease	-.19	.29	-.02	.67	-.17	-.19	-.21	-.14	.34	.21	.23	.24	-.08	.03	-.06	.04				
18	Calm	-.36	.47	-.25	.82	-.29	-.31	-.38	-.30	.41	.37	.39	.48	-.18	-.25	-.24	-.20	.34			
19	Laid-back	-.46	.47	-.37	.78	-.41	-.43	-.47	-.34	.40	.43	.36	.48	-.39	-.29	-.33	-.28	.31	.57		
20	Relaxed	-.48	.63	-.34	.86	-.41	-.45	-.48	-.38	.57	.52	.57	.57	-.31	-.26	-.35	-.25	.48	.64	.56	

Note. Correlations ≥ .10 are significant at $p < .05$; Correlations ≥ .20 are significant at $p < .01$.

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Initially, the factorability of the 16-items of IWP Multi-Affect Indicator was examined using the lavaan package (Yves, 2012) in R. It was observed that all items correlated at least .10 (p < .01) with at least one other item, suggesting reasonable factorability (Table 3). A varimax rotation provided the best-defined factor structure. All items in the principal component analysis had primary loadings over .50 (Table 4). The labels proposed by Warr (1990a) suited the extracted factors and were retained.

Table 4. Factor loadings

Factor		I	II	III	IV
HANA					
	Anxious			.70	
	Nervous			.77	
	Tense			.70	
	Worried			.70	
HAPA					
	Enthusiastic		.77		
	Excited		.82		
	Inspired		.75		
	Joyful		.64		
LANA					
	Dejected	.62			
	Depressed	.84			
	Despondent	.74			
	Hopeless	.74			
LAPA					
	At ease				.50
	Calm				.72
	Laid-back				.57
	Relaxed				.71

Note. Method of extraction: principal component analysis; rotation: varimax.

The second analytical tool used was CFA which was performed with the lavaan package (Yves, 2012) in R. The method of estimation was maximum likelihood (ML).

In the next phase of the analyses, the best-fitting CFA model was chosen as the stability model of the IWP Multi-Affect Indicator. Results for the four-factor model showed adequate model fit, supporting the proposed hypothesized model: χ^2/df = 335.64, p < .01, CFI = .93, TLI = .92, RMSEA = .08 (90% CI = .07, .09), p < .05, SRMR = .05. For the second model, results showed lack of fit: χ^2/df = 774.11, p < .01, CFI = .82, TLI = .79, RMSEA = .13 (90% CI = .12, .14), p < .05, SRMR = .08 (Table 5). With the help of the Satorra-Bentler ML correction, the following chi-squares were obtained: for M1: $\chi^2(98)$ = 261.93, p < .00; for M2: $\chi^2(103)$ = 572.79, p < .00. Based on results, M1 has better approximation than M2.

Table 5. Comparison of the two models

Model	N	χ^2	df	p-value	CFI	RMSEA	CI	SRMR
4-factor structure (M1)	341	335.64	98	.00	.93	.08	[.07, .09]	.05
2-factor structure (M2)	341	774.11	103	.00	.82	.13	[.12, .14]	.08

The third analytical tool used was Network Analysis performed with the qgraph package in R (Epskamp et al., 2012). Figure 4 reflects the patterns of correlations between the IWP Multi-Affect Indicator items. The network analysis includes sixteen nodes which are the items from the studied scale categorized by the four quadrants: HANA, HAPA, LANA, and LAPA (Figure 5). This enables the visualization of the strength and weaknesses of links between items.

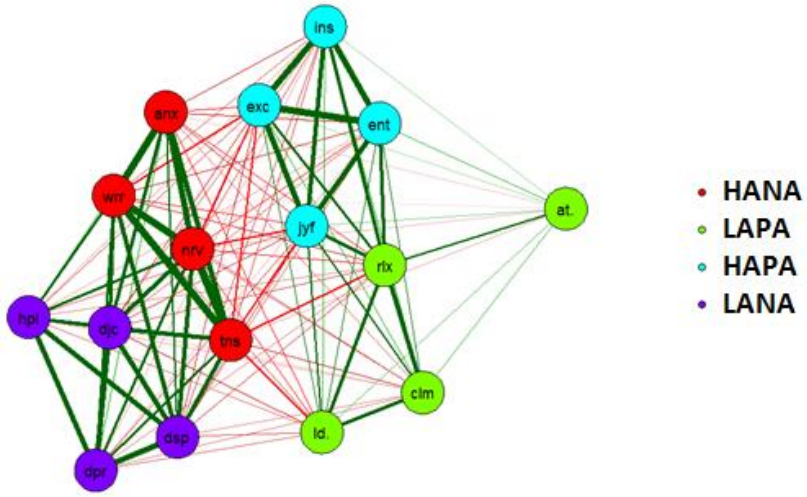

Figure 3. Network highlighting the factor structure of the IWP Multi-Affect Indicator scale. Red lines represent negative relations whereas green lines positive relations.

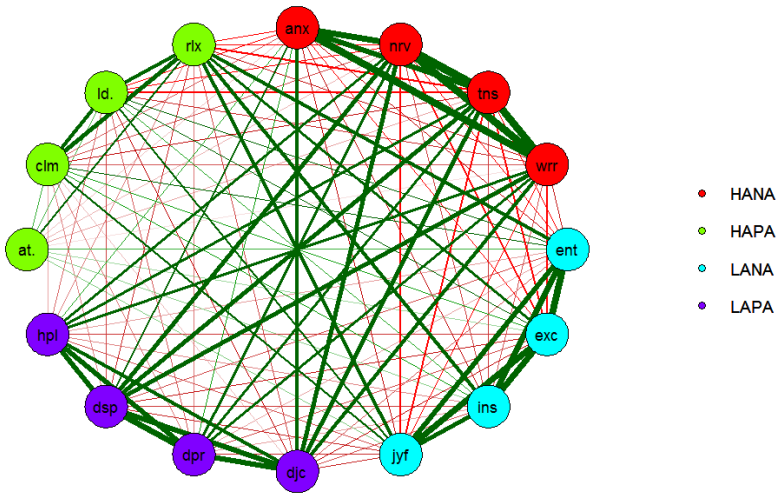

Figure 4. Network highlighting the relationship between nodes of the IWP Multi-Affect Indicator scale.

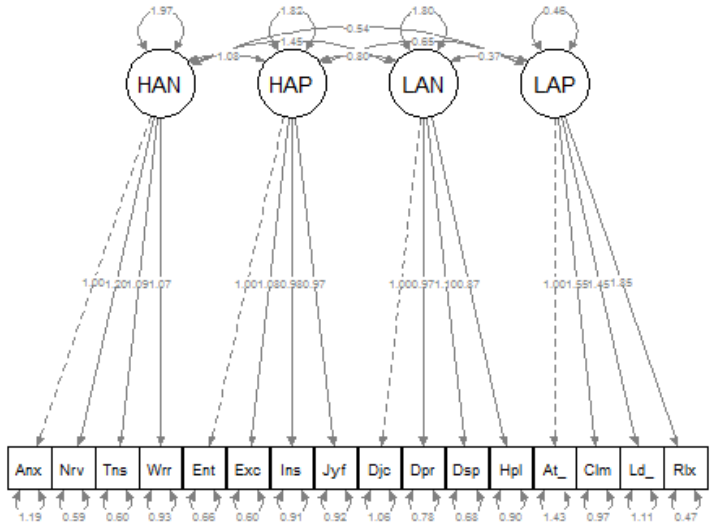

Figure 5. Four-factor model representation.

Discussion

The job-related IWP Multi-Affect scale (Warr, 1990b) consists of four interrelated factors: anxiety, comfort, depression, and enthusiasm. The results of the present paper provide further evidence on the construct validity of the IWP Multi-Affect Indicator and are also in line with the results reported by previous studies (Madrid & Patterson, 2014; Mäkikangas et al., 2007).

The four-factor structure showed a better approximation with the data than the alternative 2-factor model. This is due to the valence and arousal dimensions of emotions. Positive emotions may be highly or lowly activated and a similar explanation is applied to negative affect. Since the four-factor model offers a better fit, it provides further evidence that emotions cannot be classified as being plainly positive or negative. Network analysis further supports the connectedness of positive and negative affective descriptors (Figure 3 and 4). For example, the descriptors, enthusiastic, excited, inspired and joyful are strongly connected and representative for highly-activated positive affect, and they are also linked, although not so strongly, to the LAPA affective descriptors. However, there is a negative linkage between positive and negative affect.

The limited availability of well-validated measures to test the specificity of the emotions in work settings, particularly in non-English speaking populations is still a major drawback. The construct validity of the Multi-Affect Indicator was presented to increase the understanding of affect at work in Romania. The investigation on the affect at work for other national contexts, namely in Romania, the construct validity of the Multi-Affect Indicator was presented. Until now, the use of Multi-Affect Indicator has been limited to English and Spanish speaking populations (Madrid & Patterson, 2014; Warr, 1990).

Theoretical and practical contribution

The present study has revealed that work-related affective well-being may be understood as a multi-dimensional phenomenon. Consequently, broader conceptualizations of affective well-being may help occupational health professionals to develop corresponding intervention strategies. The IWP Multi-Affect Indicator supports this multi-dimensional approach, and should be able to potentially capture subtleties,

complexities and changes in the experience of work-related emotions, that general, that unidimensional measures cannot capture.

Finally, on a practical level, our results show that the adapted form of the IWP Multi-Affect Indicator scale has good psychometric properties and is therefore suitable for further use with Romanian speaking participants. The IWP Multi-Affect Indicator scale provides an easily administered and useful tool for further research and practice, increasing optimal measurement and intervention in organizational health well-being.

Limitations and further directions

There are several minor limitations that need to be acknowledged. First, our study was not conducted on a nationally representative sample, but rather a convenient one. Future studies using a representative sample for the Romanian population would provide more relevant information about the factor structure. Second, because this study relied on cross-sectional data, it was not possible to examine the longitudinal invariance of the Multi-Affect Indicator. Third, the sample was strongly skewed towards female participants, and therefore our results cannot be generalized, for example, to male-dominated occupational areas. With regard to gender differences on emotions, some authors suggest that differences may occur due to emotional reactivity and regulation based on brain processes or expressiveness (Chaplin & Aldao, 2013; Domes et al., 2010). Fourth, the IWP Multi-Affect Indicator measure is a self-reported measure, a fact that may have influenced the magnitude of correlations between the items. Alternative approaches for measuring affect should focus on physiological indicators (e.g., blood pressure, electrodermal activity, cortisol levels in saliva, etc.), facial recognition, microfacial expressions or even voice-assessed affect.

Future studies should focus on the construct, criterion and predictive validity of the IWP Multi-Affect Indicator scale using various samples of employees. In addition, longitudinal research is highly recommended on Warr's (1990) scale to obtain a more complete picture of causal relationships and mechanisms between work characteristics and job-related affects. Based on our results, the four-factor structure of IWP Multi-Affect scale is recommended to be utilized in later studies.

Conclusions

Considering the strengths and limitations of the IWP Multi-Affect scale, researchers should not discount the potential of this measure of affect, but rather focus on further validation in different work contexts, in relation with various personality traits, various behaviors and other affects.

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