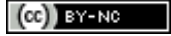


Paidéia (Ribeirão Preto)



This is an open-access article distributed under the terms of the Creative Commons Attribution License. Fonte: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0103-863X2016000100035&lng=en&nrm=iso. Acesso em: 1 mar. 2018.

REFERÊNCIA

DEMO, Gisela; PASCHOAL, Tatiane. Well-being at work scale: exploratory and confirmatory validation in the USA. **Paidéia** (Ribeirão Preto), Ribeirão Preto, v. 26, n. 63, p. 35-43, jan./abr. 2016. Disponível em: <http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0103-863X2016000100035&lng=en&nrm=iso>. Acesso em: 1 mar. 2018. doi: <http://dx.doi.org/10.1590/1982-43272663201605>.

Well-Being at Work Scale: Exploratory and Confirmatory Validation in the USA¹

Gisela Demo²
*Universidade de Brasília,
Brasília-DF, Brazil*

Tatiane Paschoal
*Universidade de Brasília,
Brasília-DF, Brazil*

Abstract: Given the lack of instruments to measure both affective and cognitive elements of well-being at work, the objective of this study is to look for evidence of validity in the US regarding the well-being at work scale, which was first validated in Brazil to measure employee well-being perceptions. Two studies using two different American samples of 809 participants in total were conducted for the exploratory and confirmatory validation of the scale. Construct validity was determined using convergent, discriminant, and nomological validity, which was assessed using a structural equation model to determine a correlation between well-being at work and human resources management practices. This research provides a comprehensive and operationally valid measure of well-being in work settings. The three-factor model can be used as a diagnostic tool for managers who wish to identify and improve the well-being of their work teams.

Keywords: emotions, factor analysis, measurement, occupational health, organizational psychology

Escala de Bem-Estar no Trabalho: Validações Exploratória e Confirmatória nos EUA

Resumo: Considerando a carência de instrumentos para mensurar os elementos afetivos e cognitivos do bem-estar no trabalho, o objetivo deste estudo foi buscar evidências de validade nos EUA da escala de bem-estar no trabalho, validada primeiramente no Brasil para avaliar as percepções dos empregados relativas ao seu bem-estar. Dois estudos foram conduzidos para as validações exploratória e confirmatória da escala, com duas amostras americanas diferentes, totalizando 809 participantes. A validade de construto foi verificada por meio das validades convergente, divergente e nomológica, esta última obtida pela análise da correlação entre o bem-estar no trabalho e práticas de gestão de pessoas em um modelo de equações estruturais. Esta pesquisa oferece uma medida abrangente e operacionalmente válida para avaliar o bem-estar no ambiente de trabalho. Como contribuição prática, o modelo de três fatores produzido pode ser usado como ferramenta diagnóstica para os gestores organizacionais que desejem identificar e aprimorar o bem-estar de suas equipes de trabalho.

Palavras-chave: emoções, análise fatorial, medidas, saúde ocupacional, psicologia organizacional

Escala de Bienestar en el Trabajo: Validación Exploratorio y Confirmatorio en los EEUU

Resumen: Considerando la carencia de instrumentos para mensurar los elementos afectivos y cognitivos del bien-estar en el trabajo, el objetivo de este estudio fue buscar en los EEUU evidencia de validez de la escala de bienestar en el trabajo validada previamente en Brasil para evaluar las percepciones de los empleados relativas a su bien-estar. Dos estudios fueron conducidos para las evaluaciones exploratoria y confirmatoria de la escala, con dos muestras americanas diferentes, totalizando 809 participantes. La validez de construto fue verificada por medio de las validades convergente, divergente y nomológica, esta última obtenida por el análisis de la correlación entre el bien-estar en el trabajo y las prácticas de gestión de personas en un modelo de ecuaciones estructurales. Esta investigación ofrece una medida amplia, operacionalmente válida para evaluar el bien-estar en el ambiente de trabajo. Como contribución práctica, el modelo de tres factores producido puede ser usado como herramienta diagnóstica para los gestores organizacionales que deseen identificar el bien-estar de sus equipos de trabajo.

Palabras clave: emociones, análisis factorial, medidas, salud ocupacional, psicología de las organizaciones

Managers and organizational researchers recognize that the market requires adaptability and flexibility to overcome the competitive challenges that organizations face. (Demo, Neiva, Nunes, & Rozzett, 2012). Rodríguez-Carvajal, Moreno-

Jiménez, Rivas-Hermosilla, Álvarez-Bejarano, and Vergel (2010) found that to meet these market challenges and achieve excellence, organizations used two different strategies. The first was focused on solving problems or deficits in the organization and its members, and the second sought to enable and facilitate the development of both organizational and individual potential.

Luthans (2002) stated that organizational behavior research has tended to emphasize the recognition of and solutions to problems in the workplace, although more recent studies focused on the positive aspects associated with individuals and organizations have begun to gain momentum. These positively focused studies have emphasized that healthy, effective organizations cannot be achieved solely through

¹ Support: National Council for Scientific and Technological Development (CNPq - Protocol no. 201124/2011-4, Abroad Postdoctoral Scholarship - PDE).

² Correspondence address:

Gisela Demo. Campus Universitário Darcy Ribeiro. Prédio da Faculdade de Economia, Administração e Contabilidade (FACE), sala AT 111-4, Asa Norte. CEP 70910-900. Brasília-DF, Brazil. E-mail: giselademo@gmail.com

remedial action (Luthans, 2002), and there has been a general consensus that maintaining individual and organizational well-being or happiness is extremely important (Warr, 2007).

General well-being refers to both subjective well-being and psychological well-being. Subjective well-being focuses on the well-being derived from pleasurable experiences, while psychological well-being focuses on human potential and fulfillment. Therefore, subjective well-being is primarily the prevalence of positive emotions and moods and an individual's satisfaction with life (Diener, 1984), whereas psychological well-being usually involves self-acceptance, the development of positive social relationships, having a degree of autonomy, environmental controls and possibilities for personal growth (Ryff, 1989).

Paschoal, Torres, and Porto (2010) and Taris and Schaufeli (2015) both found that as a result of the increase in general well-being studies, organizational literature has begun to define and operationalize well-being at work in either affective or cognitive terms. Daniels (2000) reported that researchers who adopted a psychological well-being approach to operationalize well-being combined subjective experiences with their possible antecedents. However, a focus on affect (discrete emotions and moods) may be a more effective method.

The dichotomy between these two perspectives has been shown to be detrimental to a complete understanding of the complexity of well-being (Fave, Brdar, Freire, Vella-Brodrick, & Wissing, 2011). Paschoal et al. (2010) and Taris and Schaufeli (2015) found that even in studies conducted by psychologists who adopted a multidimensional view, the affective experience, which is characterized by the positive and negative emotions felt at work, has proved to be an essential element in judging well-being at work. At the same time, fulfillment and personal expression have been recently seen as important by leading theorists examining the operationalization of well-being at work (Taris & Schaufeli, 2015; Warr, 2013; Waterman et al., 2010), as both distinct and pleasurable emotions and a perception of fulfillment have been recognized as being fundamental to happiness (Warr, 2007).

Well-being at work, therefore, clearly also includes positive experiences. When there is well-being, positive affect at work prevails over any negative affect, and workers experience personal fulfillment through the development of their individual potential (Paschoal & Tamayo, 2008; Warr, 2007). This perspective for well-being at work, which comprises both affective (emotions and moods) and cognitive (perceived fulfillment) aspects, is adopted in this study.

To assess the well-being specifically linked to work, many affect measures have been developed (Daniels, 2000; Van Katwyk, Fox, Spector, & Kelloway, 2000). In Brazil, for instance, Siqueira and Padovam (2008) proposed that job satisfaction, affective organizational commitment, and job involvement instruments could be used to evaluate well-being at work. Because of the research gap for comprehensive measures specifically regarding positive affect and the cognitive aspects of well-being at workplace, and the risk of mixing related variables or antecedents in the construct, Paschoal and Tamayo (2008) developed and validated the Well-Being at Work Scale (WBWS) in Brazil. The basic assumption behind this instrument was that work well-being should include emotion,

humor and perceptions of expressiveness and fulfillment. In operational terms, well-being at work was seen to be organized around three main factors: positive affect, negative affect and personal fulfillment at work.

The scale was made up of items for both affect and work fulfillment. The affect items were derived from the subjective well-being scale, which had been validated in Brazil by Albuquerque and Tróccoli (2004) for general well-being, based on the PANAS or Positive Affect/Negative Affect Scale (Watson, Clark, & Tellegen, 1988). Thirty-eight items were proposed for the positive and negative affect, which were submitted to judges who assessed the appropriateness of the items for a work context construct. After this analysis, the final scale was made up of nine items focused on positive emotions and humor and thirteen items focused on negative emotions and humor at work. There were also nine fulfillment items, which focused on the measurement of an individual's perception of their skills development, work potential and the achievement of life goals, were derived from interviews with employees about happiness and fulfillment at work, and previous research, in particular, Waterman's (1993) study.

A three-factor solution was expected. The respondents to the scales were 317 workers from Brazilian public and private organizations. Data were analyzed using factor analyses with oblique rotation, from which three hypothetical factors were found: positive affect-9 items, negative affect-12 items, and fulfillment-9 items. These psychometric indices were found to be reliable, indicating that the instrument had good psychometric parameters, and could be useful for both scientific research and organizational diagnostics. The objective of this study is to use the WBWS validated in Brazil by Paschoal and Tamayo (2008) to look for evidence of validity in a US sample.

Method - Study 1

Exploratory Factor Analysis (EFA)

Participants

Hair, Black, Babi, Anderson, and Tatham (2009) suggested that an adequate sample has between five and ten people for each item on the instrument, and Comrey and Lee (2013) and Tabachnick and Fidell (2012) suggested that 300 was a good sample size. In this paper a sample of 409 subjects was selected, of which 67% were male, 46% were Asian, Asian-American or Pacific Islander, 80% were under the age of 36, 53% had a Bachelor degree, and 55% had been at their respective companies for less than five years.

Instrument

The instrument used in this study was the WBWS which had been validated in Brazil by Paschoal and Tamayo (2008), in which it was found that a three-factor solution accounted for 57.3% of the construct variance and the reliability coefficients ranged from .88 to .93. To ensure the WBWS was suitable for a US sample, the 30 items in the Brazilian version were translated into English by a specialist translator and retranslated into Portuguese by one of the scale authors. Then, an English Professor from a university in California checked

the English translation. Two faculty members and one Ph.D. student from the Management and Organizations department at a Californian university Business School evaluated the content and validity of the items, from which the 30 items were confirmed for the US version.

Procedure

Data collection. Data were collected online using Amazon Mechanical Turk (MTurk) to ensure responses were received from a wide range of industries in the United States. 409 employees from various organizations participated in the study. This diversification ensured sampling variability and representativeness.

Data analysis. First, data from study 1 were examined for incorrect values, missing data and outliers and the assumptions for the multivariate analysis were checked, as per the procedures recommended by Hair et al. (2009) and Tabachnick and Fidell (2012).

Then, the data were used to select items based on the EFA. To perform the EFA, the correlation matrix, the matrix determinant and the results from the Kaiser-Meyer-Olkin (KMO) sampling adequacy test were analyzed regarding factorability. For factor extraction, Principal Components Analysis (PCA) was used. Once the matrix was deemed factorable, the eigenvalues, percentage of explained variance for each factor, scree plot graphics and the parallel analysis were then examined to determine the quantity of factors to be extracted. After defining the quantity of factors, a Principal Axis Factoring (PAF) analysis was run using Promax rotation, as correlation between the factors was expected. Cronbach's alpha was then used to check the reliability or internal consistency of each factor.

Method - Study 2

Confirmatory Factor Analysis (CFA) and Construct Validity

Participants

Byrne (2012) and Kline (2011) stated that for a CFA, an adequate sample size would be 10 subjects for each variable, but a minimum of 200 individuals was recommended. The sample size was 400 subjects, of which 58% were male, 45% were Asian, Asian-American or Pacific Islander, 85% were under the age of 40, 55% had a Bachelor degree, and 48% had been at their respective companies for less than five years.

Instrument

To run the CFA, the three-factor model validated in study 1 was used, and to assess the nomological validity, the WBW scale validated in study 1 and confirmed through the CFA was used as a measure for the perceptions of well-being at work. The six-factor Human Resource Management Policies and Practices Scale (HRMPPS) developed and validated by Demo et al. (2012) was used as the measure to assess employee perceptions regarding HRM policies and practices.

The HRMPPS has been found to have good psychometric parameters and addresses the most widely studied HRM policies and practices. This instrument has 40 items divided into six factors: Recruitment and Selection (RS); Involvement (I); Training, Development & Education (TDE); Work Conditions (WC); Competency-Based Performance Appraisal (CBPA); and Compensation and Rewards (CR). All of Cronbach's alphas ranged from .81 to .93.

Procedure

Data collection. Data were collected from the 400 employees from several companies using MTurk to ensure the presence of a wide range of industries located in the United States.

Data analysis. In this study, CFA was used to examine the factor structure and to provide construct validity through convergent and discriminant validity and a structural model, which included the variable Human Resource Management Policies and Practice (HRMPP), was used to test for nomological validity.

Two measurement models were tested and compared: a one-factor model and the three-factor model. To determine which structure adjusted better to the WBWS, the fit was evaluated using AMOS through the following indices: NC (normalized chi-square or chi-square value divided by the model's degrees of freedom = CMIN/DF), CFI (Comparative Fit Index) and RMSEA (Root Mean Square Error of Approximation), as recommended by Kline (2011). Internal consistency was measured using composite reliability, also known as Dillon-Goldstein's rho or Jöreskog's rho, as proposed by Chin (2009). Dillon-Goldstein's rho is a more adequate reliability measure than Cronbach's alpha for Structural Equation Modeling as it is based on the loadings rather than the correlations observed between the observed variables.

Finally, construct validity was examined in this study using convergent, discriminant, and nomological validity. To assess nomological validity, a structural model was conducted to assess the correlation between HRM policies and well-being at work.

Ethical Considerations

All ethical precautions were taken throughout the study. A consent form and research information sheet were provided on-line for the subjects as data collection for these studies was done on-line using the MTurk platform. Data confidentiality was also secured. This research was approved by the North General IRB Committee at the University of California, Los Angeles. The protocol ID was IRB#12-000410, obtained on March 23, 2012.

Results

Study 1: Exploratory Factor Analysis

The result analyses confirmed that the matrix had a high enough factorability to perform the exploratory factor analysis. The KMO was found to be .952, which according

to Kaiser (1974) was marvelous. The matrix determinant was extremely close to zero, indicating that the number of factors was lower than the number of items. Using Principal Components Analysis, it was possible to determine the number of factors to be extracted. All criteria adopted (eigenvalues higher than 1.0, explained variance percentage of each factor above 3%, scree plot graphic visual analysis and parallel analysis) pointed to the existence of three factors.

After four iterations, the WBWS resulted in a multifactorial instrument of 29 items distributed across three factors or subscales. These factors were compatible with the theoretical review done, and explained 63% of the construct's

total variance, thus meeting Hair et al. (2009) criterion which specifies that a scale needs to have enough factors to explain about 60% of the construct variance. To assess the scale validity or quality of the items, the minimum acceptable load of the items was selected as .40 (Tabachnick & Fidell, 2012), and 100% of these items were classified as excellent, very good, and good (Comrey & Lee, 2013).

All three factors showed high reliability, with alpha coefficients higher than .90 (Nunnally & Bernstein, 2006). Table 1 synthesizes the results obtained for the exploratory factor analysis.

Table 1
Results of Exploratory Factor Analysis

Item	Factor 1 Positive Affect	Factor 2 Negative Affect	Factor Fulfillment
WB13: Over the past six months, my work made me feel happy.	.91		
WB17: Over the past six months, my work made me feel excited.	.88		
WB1: Over the past six months, my work made me feel cheerful.	.79		
WB11: Over the past six months, my work made me feel enthusiastic.	.78		
WB19: Over the past six months, my work made me feel proud.	.73		
WB4: Over the past six months, my work made me feel content.	.67		
WB3: Over the past six months, my work made me feel willing.	.66		
WB21: Over the past six months, my work made me feel calm.	.64		
WB8: Over the past six months, my work made me feel active.	.60		
WB15: Over the past six months, my work made me feel distressed.		.85	
WB9: Over the past six months, my work made me feel upset.		.83	
WB6: Over the past six months, my work made me feel depressed.		.81	
WB16: Over the past six months, my work made me feel jittery.		.81	
WB20: Over the past six months, my work made me feel angry.		.81	
WB18: Over the past six months, my work made me feel nervous.		.78	
WB14: Over the past six months, my work made me feel frustrated.		.78	
WB10: Over the past six months, my work made me feel impatient.		.77	
WB5: Over the past six months, my work made me feel annoyed.		.72	
WB2: Over the past six months, my work made me feel worried.		.70	
WB12: Over the past six months, my work made me feel anxious.		.67	
WB7: Over the past six months, my work made me feel bored.		.61	
WB23: In my work, I achieve my potential.			.88
WB24: In my work, I develop abilities that I consider important.			.78
WB26: In my work, I engage in activities that express my skills.			.77
WB27: In my work, I overcome challenges.			.73
WB28: In my work, I achieve results that I regard as valuable.			.68
WB30: In my work, I advance in the goals I set for my life.			.67
WB22: In my work, I do what I really like doing.			.58
WB29: In my work, I express what is best in me.			.51
Percentage of variance (%)	37.0	19.9	6.04
Cronbach's alpha (α)	.92	.94	.92

Study 2: Confirmatory Factor Analysis and Construct Validity

For the dimensionality assessment, two measurement models were tested and compared (Byrne, 2012): a one-factor model and a three-factor model structure obtained from the EFA. Two CFAs were run and the maximum likelihood

method used to estimate both models. The one-factor model had 88 parameters; with $\chi^2_{(377)} = 3101.18, p < .001$ or $NC = 8.22$; $CFI = .62$; $RMSEA = .13$ (confidence interval from .13 to .14), according to Kline (2011). Therefore, the one-factor model provided unsatisfactory levels of fit. However, the hypothesized three-factor model was tested and confirmed as providing a good fit for all indices (Figure 1).

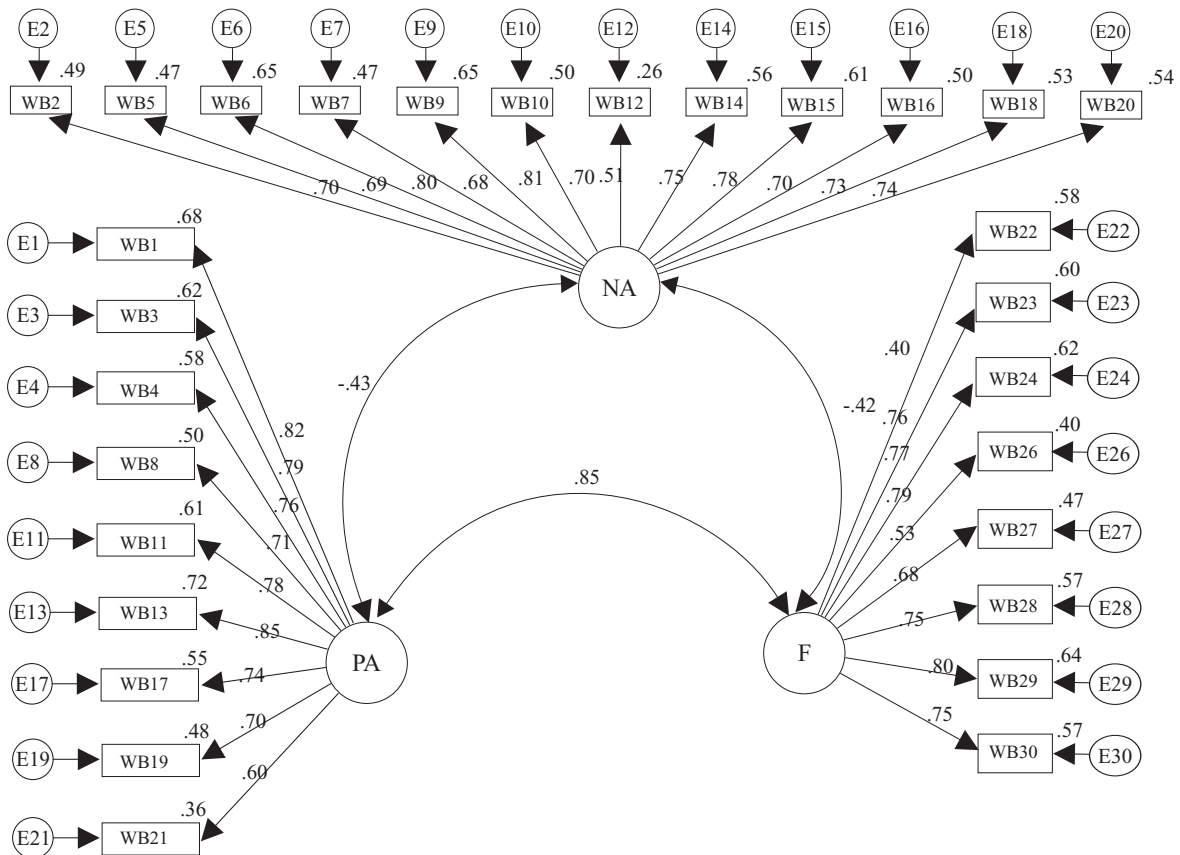


Figure 1. Three-factor model for well-being at work. Note. Latent Variables: PA = Positive Affect, NA = Negative Affect, F = Fulfillment. Parameters: $\chi^2_{(374)} = 985.99, p < .001$ or $NC = 2.63$; $CFI = .92$; $RMSEA = .06$.

The model had 93 parameters; with $\chi^2_{(374)} = 985.99, p < .001$ or $NC = 2.63$; $CFI = .92$; $RMSEA = .06$ (confidence interval from .06 to .07). The factor loadings for the items in this confirmatory validation were between .51 and .85, thus showing good quality according to Comrey and Lee (2013). Therefore, taken together, the three-factor model was found to outperform the one-factor model on all measures.

The results of these analyses suggested that well-being at work in United States organizations is a multi-dimensional construct with three dimensions. It is important to emphasize that in the confirmatory analysis, the same multifactorial structure of 29 items distributed across three factors was retained in agreement with the reviewed literature and with the exploratory validation, so the interpretation of the factors is the same as that displayed in Table 1. To assess the reliabilities

of the three Well-Being at Work subscales, Jöreskog’s rho was computed for each factor. Chin (2009) recommended that acceptable scores for the Jöreskog’s rho should be higher than 0.7. The results were very satisfactory, ranging from .91 through .93 for all three factors; positive affect ($\rho = .92$), negative affect ($\rho = .93$) and fulfillment ($\rho = .91$).

In this study, the construct validity of the WBW scale was examined through an assessment of the convergent, discriminant, and nomological validity. Convergent validity refers to the degree of agreement between two or more measures in the same construct. Hair et al. (2009) noted that there were several indicators for convergent validity; examination of the factor loadings, the factor reliabilities and the extracted variance. As discussed earlier, the reliability of all three factors was found to be above $\rho = .70$, thus

indicating appropriate convergence (Hair et al., 2009). In addition, all item loadings on the Well-Being at Work measure were significantly positive for their specified factors (Figure 2). Moreover, all 29 items had loadings over .5 (Hair et al., 2009) on the factors to which they were assigned, which indicated the good convergent validity of the scale. Hair et al. (2009) found that extracted variances over .5 (or 50%) suggested appropriate convergence and that all the three factors showed extracted variances higher than .5. Therefore, from our examination, the scales for the three dimensions of well-being at work had good convergent validity.

Discriminant validity indicates the degree to which the conceptually distinct construct measures differ. As outlined in Hair et al. (2009), the pairwise correlations between factors obtained from the three-factor correlated model were analyzed and compared with the variance extracted estimates for the dimensions making up each possible pair. Evidence of discriminant validity occurs when the extracted variance estimates exceed the square of the correlation between the factors making up each pair. The relatively high variance extracted for each factor compared to the square of the correlations between the factors indicated good discriminant validity (Table 2).

Table 2
Discriminant Validity

Factor	Positive Affect	Negative Affect	Fulfillment
Positive Affect	.56 ^a		
Negative Affect	.08	.52 ^a	
Fulfillment	.25	.05	.56 ^a

Note. ^aVariance Extracted.

Nomological validity is the ability of a scale to behave as expected with respect to the other constructs to which it is related. Nomological validity should be tested by examining whether the correlations between the constructs make sense to a theory of measurement (Hair et al., 2009). There are well-grounded theoretical reasons to expect a strong and positive association between Human Resources Management (HRM) policies and practices, organizational commitment and well-being at work (Guest & Conway, 2011; Nishii, Lepak, & Schneider, 2008; Traldi & Demo, 2012). Adopting

the instrument developed by Siqueira and Padovam (2008), for instance, Horta, Demo, and Roure (2012) found an association between HRM policies and well-being at work. Therefore, in the current context, nomological validity would be demonstrated if the scores for the HRM policies and practices measures were positively and significantly correlated with well-being at work. An assessment of the nomological validity of the WBW scale was conducted using the structural equation modeling analyses depicted in Figure 2.

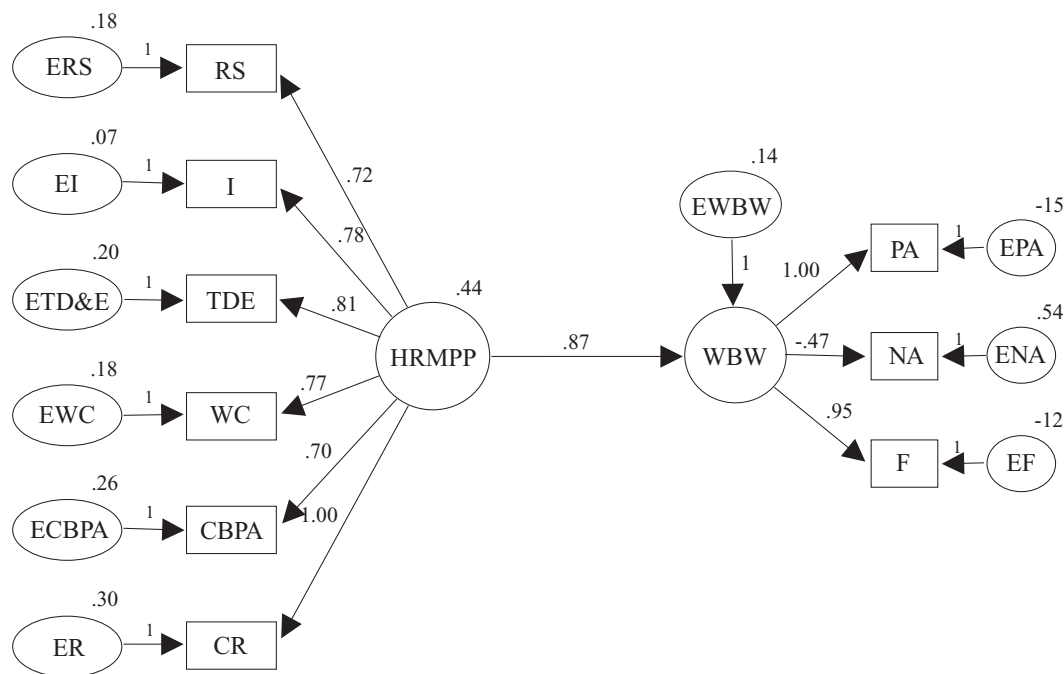


Figure 2. Nomological validity. Note. Latent Variables: HRMPP = Human Resource Management Policies and Practices, WBW = Well-Being at Work. Parameters: $\chi^2_{(26)} = 87.36, p < .001; NC = 3.36; CFI = .96; RMSEA = .09.$

As far as the measurement model was concerned, the data in this study showed a satisfactory level of fit: 31 parameters, with $\chi^2_{(26)} = 87.36$, $p < .001$ or $NC = 3.36$; $CFI = .96$; $RMSEA = .09$ (confidence interval from .07 to .11). Moreover, all nine items were significant and loaded as predicted for the respective factors. These results provide further evidence to suggest that the proposed scale validated in this study is a reliable operational measure for well-being at work. Also, through the analysis of our structural model, we verified that our data supported the assertion that there was a positive correlation between HRM policies and well-being at work ($r = .87$, $p < .001$). Consequently, there was evidence of nomological validity for the proposed WBW scale.

Discussion

This paper reported on two studies on the development and validation of a measure of well-being at work (WBW) for US organizations. The WBWS was found to demonstrate a high degree of reliability and construct validity, which was consistent with the previous findings in Paschoal and Tamayo (2008) in terms of dimensions, explained variance for each factor and the item factor loadings. Nevertheless, even though previous analyses showed a satisfactory performance, it was also necessary to analyze the WBWS theoretical consistency or validity of expression to verify if the scale items were in line with the theoretical concepts used to support it.

Our results supported the previous findings for well-being at work for the affective (hedonic) and cognitive (fulfillment) components (Paschoal & Tamayo, 2008). There was an observed tendency in previous research to develop more integrated frameworks (Taris & Schaufeli, 2015; Warr, 2007). Fave et al. (2011) noted that while the affective well-being component focuses on emotions and the cognitive component examines long-term processes of growth and self-actualization, both must be jointly evaluated. Organizations provide either opportunities for or restrictions on the ability of workers to reach their goals and develop their potential and are therefore environments conducive to both emotive expressions and fulfillment experiences (Paschoal & Tamayo, 2008). In this study, these affect and fulfillment dimensions were found to contribute to an explanation of the variance in well-being at work.

For the affective dimension for work well-being, the organization of the items for the two factors was found to be in line with previous studies in terms of the affect structures at work (Daniels, 2000; Van Katwyk et al., 2000). Although it is possible to propose structures for the circumplex phenomenon and different factors for positive and negative emotions such as anxiety, comfort, pleasure, displeasure, enthusiasm and depression (Warr, 2007), research findings indicate that affect at work is consistently structured around two general positive and negative dimensions (Daniels, 2000; Van Katwyk et al., 2000), which were supported in the initial studies on the PANAS (Watson et al., 1988). The items in the WBWS are made up of the central dimensions of affect at work and encompass a wide range of emotions related to anxiety, comfort, pleasure, displeasure, enthusiasm

and depression, such as impatience, calmness, cheerfulness, annoyance, enthusiasm and frustration.

One of the criticisms for the inclusion of fulfillment components in the measurement of well-being is the possibility of including variables related to well-being antecedents, such as autonomy and positive social relationships (Daniels, 2000). The WBSW items that measure fulfillment (“I express what is best in me,” for instance) are focused on the subjective experiences of the worker and not on the organizational characteristics that could influence these experiences. This task, therefore, has difficulties, as the construct is complex and wide ranging.

According to Waterman et al. (2010), the measurement of the cognitive component of well-being should include self-discovery, perceived development of one’s best potential, a sense of purpose and meaning in life, and intense involvement in activities. The eight items for fulfillment that remained in the WBWS, such as “I express what is best in me,” “I overcome challenges” and “I Achieve my potential,” may only embrace the main elements. Further, the high factor loadings found for this factor gave evidence of its relevance to the operationalization of the phenomenon in question.

However, the 29 items on the WBWS were found to have theoretical support as they corresponded to the previous research reviewed throughout this paper. Moreover, the WBWS allows researchers and managers to assess both the affective and cognitive dimensions of well-being at work and emphasize positive experiences, which have been neglected in many previous empirical studies.

For the well-being at work predictors, previous research has highlighted that organizational variables can have a positive association with well-being at work. This study has shown this strong association between well-being and HRM practices, confirming previous studies (Horta et al., 2012; Nishii et al., 2008). Considering that the literature on the antecedents of well-being at work has been focused mainly on studies involving the affective well-being dimension only or have tended to mix the antecedents or related variables with well-being at work (Paschoal et al., 2010), the scale proposed here offers an alternative measure to fill the gap in the literature.

The present study has both academic and practical contributions. First, we explored the different perspectives in the WBW, provided a clear conceptualization of the construct, and then developed a conceptual model which included the two most mentioned affective and cognitive components. Second, we provided empirical evidence for the testable scales, which proved to be both reliable and valid. This study provides a new theoretical insight into how well-being at work can be understood so as to provide increased positive experiences to employees. Third, this is one of the few attempts to approximate these phenomena to a specific work context. Fourth, the model was empirically tested and found to have substantial association with HRM policies and practices. Considering that well-being at work is essential for effective, competitive organizational functioning, our scale could be an important evaluation instrument for managers seeking to improve employee well-being at work.

There are some limitations to this work. This study is

the first attempt to build and test a conceptual framework for well-being at work which includes both affective and cognitive (fulfillment) aspects. However, the first limitation is that the present findings are indicative rather than conclusive. In spite of the scale's validation in Brazil, it would be useful to further assess the generalizability of the WBWS to other business environments in such places as Europe and Asia. Moreover, with more replicative and creative research, a more comprehensive conceptual framework related to well-being at work can be developed in the future.

It is also important to consider the cultural bias implied in the definition of happiness or well-being at work. The idea of pleasure and fulfillment, for example, is focused on employees' concern for themselves. This assumption is relevant to many Western cultures, such as the United States, and also appears to have been adequate for research in Brazil. Further studies, however, need to deepen each constituent element of the well-being dimensions for different cultures. Demographic variables such as age, gender, education, and variables related to occupational roles should also be considered to better understand well-being at work and its antecedents.

Another limitation was that because of the cross-sectional nature of the data, questions regarding causality remained unanswered. This means that the relationships between HRM practices and well-being at work may not be interpreted as proof of a causal relationship, but rather as lending support for a prior causal scheme. The development of a time-series database and the testing of the HRM practices association with well-being at work in a longitudinal framework would provide more insights into probable causation.

Considering the increased research attention paid to the positive direction organizations should adopt to enable and facilitate the development of both organizational and individual potential, this novel study provides a comprehensive operational measure that includes both affective and cognitive aspects for well-being at work.

References

- Albuquerque, A. S., & Tróccoli, B. T. (2004). Desenvolvimento de uma escala de bem-estar subjetivo [Development of a subjective well-being scale]. *Psicologia: Teoria e Pesquisa, 20*(2), 153-164. doi:10.1590/S0102-37722004000200008
- Byrne, B. M. (2012). *Structural equation modeling with MPLUS: Basic concepts, applications, and programming*. New York, NY: Routledge.
- Chin, W. W. (2009). The partial least squares approach for structural equation modeling. In G. A. Marcoulides (Ed.), *Modern methods for business research* (pp. 295-336). Mahwah, NJ: Lawrence Erlbaum.
- Comrey, A. L., & Lee, H. B. (2013). *A first course in factor analysis* (2nd ed.). New York, NY: Psychology Press.
- Daniels, K. (2000). Measures of five aspects of affective well-being at work. *Human Relations, 53*(2), 275-294. doi:10.1177/0018726700532005
- Demo, G., Neiva, E. R., Nunes, I., & Rozzett, K. (2012). Human resources management policies and practices scale (HRMPPS): Exploratory and confirmatory factor analysis. *Brazilian Administration Review, 9*(4), 395-420. doi:10.1590/S1807-76922012005000006
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin, 95*(3), 542-575. doi:10.1037/0033-2909.95.3.542
- Fave, A. D., Brdar, I., Freire, T., Vella-Brodrick, D., & Wissing, M. P. (2011). The eudaimonic and hedonic components of happiness: Qualitative and quantitative findings. *Social Indicators Research, 100*(2), 185-207. doi:10.1007/s11205-010-9632-5
- Guest, D., & Conway, N. (2011). The impact of HR practices, HR effectiveness and a 'strong HR system' on organizational outcomes: A stakeholder perspective. *The International Journal of Human Resource Management, 22*(8), 1686-1702. doi:10.1080/09585192.2011.565657
- Hair, J. F., Jr., Black, W. C., Babi, B. J., Anderson, R. E., & Tatham, R. L. (2009). *Análise multivariada de dados* (A. S. Sant'Anna, Trans., 6th ed.). Porto Alegre, RS: Bookman.
- Horta, P., Demo, G., & Roure, P. (2012). Políticas de gestão de pessoas, confiança e bem-estar: Estudo em uma multinacional [Human resource management policies, confidence and well-being: A study in a multinational company]. *Revista de Administração Contemporânea, 16*(4), 566-585. doi:10.1590/S1415-65552012000400005
- Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika, 39*(1), 31-36. doi:10.1007/BF02291575
- Kline, R. B. (2011). *Principles and practice of structural equation modeling* (3rd ed.). New York, NY: Guilford.
- Luthans, F. (2002). The need for and meaning of positive organizational behavior. *Journal of Organizational Behavior, 23*(6), 695-706. doi:10.1002/job.165
- Nishii, L. H., Lepak, D. P., & Schneider, B. (2008). Employee attributions of the "Why" of HR practices: Their effects on employee attitudes and behaviors, and customer satisfaction. *Personnel Psychology, 61*(3), 503-545. doi:10.1111/j.1744-6570.2008.00121.x
- Nunnally, J. C., & Bernstein, I. H. (2006). *Psychometric theory* (3rd ed.). New York, NY: Lightning Source.
- Paschoal, T., & Tamayo, A. (2008). Construção e validação da escala de bem-estar no trabalho [Construction and validation of the work well-being scale]. *Avaliação Psicológica, 7*(1), 11-22. doi:10.1590/S1415-65552012000200006
- Paschoal, T., Torres, C. V., & Porto, J. B. (2010). Felicidade no trabalho: Relações com suporte organizacional e suporte social [Happiness at work: Relations with organizational support and social support]. *Revista de Administração Contemporânea, 14*(6), 1054-1072. doi:10.1590/S1415-65552010000700005
- Rodríguez-Carvajal, R., Moreno-Jiménez, B., Rivas-Hermosilla, S., Álvarez-Bejarano, A., & Vergel, A. I.

- S. (2010). Positive psychology at work: Mutual gains for individuals and organizations. *Revista de Psicología del Trabajo y de las Organizaciones*, 26(3), 235-253. doi:10.5093/tr2010v26n3a7
- Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57(6), 1069-1081. doi:10.1037/0022-3514.57.6.1069
- Siqueira, M. M. M., & Padovam, V. A. R. (2008). Bases teóricas de bem-estar subjetivo, bem-estar psicológico e bem-estar no trabalho [Theoretical basis of subjective well-being, psychological well-being and well-being at work]. *Psicologia: Teoria e Pesquisa*, 24(2), 201-209. doi:10.1590/S0102-37722008000200010
- Tabachnick, B. G., & Fidell, L. S. (2012). *Using multivariate statistics* (6th ed.). San Francisco, CA: Allyn and Bacon.
- Taris, T. W., & Schaufeli, W. B. (2015). Individual well-being and performance at work: A conceptual and theoretical overview. In M. van Veldhoven & R. Peccei (Eds.), *Well-being and performance at work: The role of context* (pp. 15-34). London, United Kingdom: Psychology Press.
- Traldi, M. T. F., & Demo, G. (2012). Comprometimento, bem-estar e satisfação dos professores de administração de uma universidade federal [Commitment, well-being and satisfaction of management professors at a federal university]. *Revista Eletrônica de Administração*, 18(2), 290-316. doi:10.1590/S1413-23112012000200001
- Van Katwyk, P. T., Fox, S., Spector, P. E., & Kelloway, E. K. (2000). Using the job-related affective wellbeing scales (JAWS) to investigate affective responds to work stressors. *Journal of Occupational Health Psychology*, 5(2), 219-230. doi:10.1037/1076-8998.5.2.219
- Warr, P. (2007). *Work, happiness and unhappiness*. Hillsdale, NJ: Lawrence Erlbaum.
- Warr, P. (2013). How to think about and measure psychological well-being. In R. R. Sinclair, M. Wang, & L. E. Tetrick (Eds.), *Research methods in occupational health psychology: Measurement, design, and data analysis* (pp. 76-90). New York, NY: Routledge.
- Waterman, A. S. (1993). Two conceptions of happiness: Contrasts of personal expressiveness (eudaimonia) and hedonic enjoyment. *Journal of Personality and Social Psychology*, 64(4), 678-691. doi:10.1037/0022-3514.64.4.678
- Waterman, A. S., Schwartz, S. J., Zamboanga, B. L., Ravert, R. D., Williams, M. K., Agocha, V. B., ... Donnellan, M. B. (2010). The Questionnaire for Eudaimonic Well-Being: Psychometric properties, demographic comparisons, and evidence of validity. *The Journal of Positive Psychology*, 5(1), 41-61. doi:10.1080/17439760903435208
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54(6), 1063-1070. doi:10.1037/0022-3514.54.6.1063
- Gisela Demo* is an Associate Professor of the Universidade de Brasília.
- Tatiane Paschoal* is a Professor of the Universidade de Brasília.
- Received:* Jan. 21, 2015
1st Revision: Apr. 15, 2015
2nd Revision: Apr. 23, 2015
Approved: May 29, 2015
- How to cite this article:*
Demo, G., & Paschoal, T. (2016). Well-Being at Work Scale: Exploratory and confirmatory validation in the USA. *Paidéia (Ribeirão Preto)*, 26(63), 35-43. doi:10.1590/1982-43272663201605