

Theoretical and Review Articles // Artículos teóricos y de revisión

- | | | |
|---|---------|--|
| Lara Salguero Lucas
Miguel Ángel Pérez Nieto | 241-259 | A Motivational Approach to Sexual Desire: A Model for Self-Regulation. |
| Arul Muthu
Amirtha Revathy | 261-275 | Effectiveness of Acceptance and Commitment Therapy (ACT) for Anxiety, Depression, and Stress during COVID-19 Pandemic: A Narrative Review. |

Research Articles // Artículos de investigación

- | | | |
|---|---------|---|
| Manuel González
Mario González
Laureano Lorenzo
Pilar Rascón | 279-289 | Síntomas de ansiedad y depresión en población general y clínica: contribución diferencial de las estrategias de regulación emocional. [<i>Symptoms of Anxiety and Depression in General and Clinical Population: Differential Contribution of Emotional Regulation Strategies.</i>] |
| Maliheh Ahmadi Beni
Razieh Izadi
Atieh Mirzaamiri | 291-300 | Effectiveness of ACT Group Therapy, DNA-V Model on Emotion Regulation, Social and Academic Skills of Adolescents. |
| Diana M. Bravo
Juan C. Suárez Falcón
Javier M. Bianchi Salguero
Bárbara Gil Luciano
Francisco J. Ruiz | 301-312 | Psychometric properties and measurement invariance of the Work-Related Acceptance and Action Questionnaire (WAAQ) in a Colombian sample. |
| Mercedes De Weerdt
Aaron L. Pincus
Gina Rossi | 313-329 | Convergence and Divergence of Grandiose and Vulnerable Narcissism with the Minnesota Multiphasic Personality Inventory-2-Restructured Form. |

Brief Reports and Case Studies // Informes breves y estudios de caso

- | | | |
|---|---------|--|
| Paula García Vázquez
Antonio Serrano García
Carmen Vilella Martín
Clara M. Franch Pato
Rocío Gómez Martínez | 333-337 | Empathic Resonance: A Case of Dissociative Identity Disorder (DID).. |
|---|---------|--|

Notes and Editorial Information // Avisos e información editorial

- | | | |
|------------------|---------|--|
| Editorial Office | 341-342 | Normas de publicación- <i>Instructions to Authors</i> . |
| Editorial Office | 343 | Cobertura e indexación de IJP&PT. [<i>IJP&PT' Abstracting and Indexing.</i>] |

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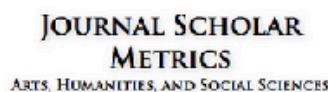
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Psychometric Properties and Measurement Invariance of the Work-Related Acceptance and Action Questionnaire (WAAQ) in a Colombian Sample

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ABSTRACT

The Work-Related Acceptance and Action Questionnaire (WAAQ) is a self-report instrument that measures psychological flexibility at work. Although this scale has been validated in some languages, its psychometric properties in Colombia are unknown, making it challenging to assess work-related psychological flexibility in this country. The present study analyzed the psychometric properties and factor structure of the WAAQ in a sample of 985 Colombian workers. The internal consistency of the WAAQ measured through coefficient alpha was .88. The one-factor model with correlated error terms between items 4 and 7 showed a very good fit to the data ($RMSEA= 0.033$, $CFI= .998$, $NNFI= .997$, $SRMR= 0.018$). The WAAQ showed metric and scalar invariance across gender, age group, socioeconomic stratum, and hierarchical level. Furthermore, it correlated negatively with psychological inflexibility, psychological distress, emotional exhaustion, and cynicism and positively with professional efficacy, work engagement, and job satisfaction. In conclusion, the WAAQ seems to be a valid self-report of work-related psychological flexibility in Colombian samples.

Key words: psychological flexibility, work, WAAQ, psychometric study.

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Novelty and Significance

What is already known about the topic?

- The Work-Related Acceptance and Action Questionnaire has shown good psychometric properties as a measure of psychological flexibility at work.

What this paper adds?

- This study analyzes the psychometric properties of the Work-Related Acceptance and Action Questionnaire in a large sample of Colombian employees.
- The Work-Related Acceptance and Action Questionnaire showed good internal consistency and the expected one-factor structure.
- The one-factor model of the Work-Related Acceptance and Action Questionnaire was invariant across gender, age group, socioeconomic status, and hierarchical level.

Job stress is a widespread phenomenon that can negatively affect employees' health and well-being (Menghini & Balducci, 2021). According to the International Labor Organization (2016), research indicates that high levels of job stress contribute

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to the development of health-related problems, including psychological disorders (e.g., burnout or affective and anxiety disorders) and physical conditions (e.g., cardiovascular diseases and musculoskeletal disorders). In addition, research has identified some risk factors for developing high levels of job stress, such as an imbalance in job design, occupational uncertainty, and lack of value and respect in the workplace (Harvey *et alia*, 2017). However, the stressful nature of the situation is insufficient to understand the phenomenon of job stress completely, and the ability to cope with stressors is recognized to play a crucial role (Holmberg Kemani, Holmström, Öst, & Wicksell, 2019). Specifically, inappropriate avoidant coping behaviors such as alcohol and drug abuse, smoking, unhealthy eating, and lack of sleep might worsen the situation. Thus, psychological interventions can contribute to reducing stress-related problems at work by fostering more appropriate coping strategies.

In recent years, contextual behavioral science has shown a growing interest in identifying variables that play a crucial role in stress-related problems at work and testing the efficacy of psychological interventions (e.g., Moran, 2015; Ortiz Fune, Kanter, & Arias, 2020; Towey-Swift, Lauvrud, & Whittington, 2023). Specifically, this research has shown that psychological (in)flexibility is an important factor in work-related outcomes, including burnout and worksite stress, work engagement, professional efficacy, and job satisfaction (e.g., Bond, Lloyd, & Guenole, 2013; Garner & Golijani-Moghaddam, 2021; Ruiz & Odriozola González, 2017).

Psychological flexibility and inflexibility are the central constructs in the acceptance and commitment therapy (ACT; Hayes & Strosahl, 2005) model of mental health and behavioral effectiveness. These processes refer to two functional classes of responding to own behavior, including private events such as thoughts, memories, feelings, etc. (Luciano, Törneke, & Ruiz, 2022). Specifically, psychological inflexibility consists of responding in accordance with the primary functions of private events and without contacting chosen values (Bond *et alia*, 2011). When private events have aversive functions, inflexible responding will lead to engaging in some experiential avoidance strategy (e.g., thought suppression, distraction, impulsive behavior, worry/rumination, etc.) that produce counterproductive consequences in the long term.

Contrarily, psychological flexibility can be defined as the skill of discriminating ongoing private experiences from a nonjudgmental observational perspective and orienting behavior toward valued ends (Hayes & Strosahl, 2005). Thus, flexible responding when facing job stressors involves (a) observing the private events that surface as a momentary experience from the perspective of a transcendent self, (b) symbolically contacting the short- and long-term consequences of available behavioral options (e.g., behaving under the control of the aversive functions of private events or engaging in behavior connected to meaningful and valued directions), and (c) choosing to behave according to the most valued consequences. Fostering psychological flexibility is thought to provide workers with a personally meaningful way to cope with job stressors that will produce long-term desired consequences. Indeed, ACT interventions have been efficacious in preventing and reducing worksite stress and burnout (Dereix Calonge, Ruiz, Sierra, Peña Vargas, & Ramírez, 2019; Flaxman & Bond, 2010; Moran, 2015; Prudenzi *et alia*, 2021; Towey-Swift *et alia*, 2023).

The research on psychological (in)flexibility has been facilitated by the development of general self-report instruments, such as the Acceptance and Action Questionnaire – II (AAQ-II; Bond *et alia*, 2011). The AAQ-II is a measure of psychological inflexibility as averaged across contexts. However, recognizing the context sensitivity

of psychological (in)flexibility, the AAQ-II has been adapted to specific domains such as irritable bowel syndrome and trichotillomania (see a review of AAQ adaptations in Ong, Lee, Levin, & Twohig, 2019). Bond *et alia* (2013) developed the Work-Related Acceptance and Action Questionnaire (WAAQ), a measure of psychological flexibility that has significantly strengthened the analysis of this process in the workplace (Garner & Golijani-Moghaddam, 2021).

The WAAQ was developed in a sequence of three studies that employed five samples with a total of 745 workers (Bond *et alia*, 2013). Across these studies, the WAAQ showed good internal consistency with a Cronbach's alpha of .83. The one-factor structure of the WAAQ was established through exploratory and confirmatory factor analyses. The WAAQ showed moderate negative correlations with the general measure of psychological inflexibility (AAQ-II: $r = -.30$ and $-.31$). Compared to the AAQ-II, the WAAQ was more strongly associated with work-specific variables, such as work engagement (vigor, dedication, and absorption) and task performance. Additionally, the WAAQ showed incremental validity in predicting work-related variables above and beyond the Big-Five personality factors. In summary, the WAAQ showed good internal consistency, a sound one-factor structure, and convergent, concurrent, and incremental predictive validity.

Subsequent studies adapted the WAAQ to other languages. Specifically, Ruiz and Odriozola González (2014) analyzed the psychometric properties of the Spanish version of the WAAQ in a sample of 209 Spaniard employees. The WAAQ showed excellent internal consistency ($\alpha = .92$) and a one-factor structure according to the exploratory factor analysis conducted. In addition, the WAAQ showed small to strong correlations with the AAQ-II ($r = -.20$) and burnout dimensions (Emotional Exhaustion: $r = -.18$; Cynicism: $r = -.29$; Professional Efficacy: $r = .62$). Compared to the AAQ-II, the WAAQ obtained higher correlations with work engagement.

Pinto, Ferreira, and Valentini (2015) adapted the WAAQ into Portuguese and analyzed its psychometric properties in a sample of 583 Brazilian workers. The internal consistency of the WAAQ was acceptable, and the one-factor model obtained a good fit in the confirmatory factor analysis conducted. Holmberg, Kemani, Holmström, Öst, and Wicksell (2019) adapted the WAAQ into Swedish and analyzed its functioning in a sample of 184 health professionals. The instrument showed good internal consistency and significant correlations with work engagement, life satisfaction, and mental health. The exploratory factor analysis yielded a one-factor structure. Lastly, Xu, Liu, Ou, Xie, and Chen (2018) adapted the WAAQ into Chinese and administered it to a sample of 417 nurses. They found that the WAAQ had an excellent internal consistency ($\alpha = .92$) and good test-retest reliability ($r = .77$). The factor structure was analyzed through exploratory factor analysis, which yielded a one-factor structure. The WAAQ showed small correlations with the AAQ-II and mental health ($r = -.25$ in both cases) and stronger correlations with general self-efficacy ($r = .49$) and work engagement ($r = .44$).

In summary, the WAAQ is a promising measure of work-related psychological flexibility. It has shown adequate to excellent internal consistency, and the one-factor structure seems to hold across different languages. The correlations between the WAAQ and AAQ-II have been small to moderate. As expected, the WAAQ has shown stronger correlations with work-related variables than the AAQ-II and predictive validity above and beyond the Big-Five personality factors. However, there are significant gaps in the psychometric analysis of the WAAQ. First, most of the studies have analyzed its factor structure only by means of exploratory factor analyses in relatively small samples.

Second, there is no evidence to date regarding the measurement invariance of the WAAQ sociodemographic variables (e.g., gender, age, and socioeconomic status) and the hierarchical level within the organization. Lastly, the functioning of the WAAQ has been only analyzed in one Spanish-speaking country with a relatively small sample. Accordingly, this study aimed to analyze the psychometric properties of the Spanish version of the WAAQ in a large sample of Colombian employees. Specifically, we analyzed the items' discrimination index, the scale's internal consistency, the fit of the one-factor model, the measurement invariance of this model across sociodemographic variables and hierarchical levels, and the convergent validity of the WAAQ.

METHOD

Participants

Nine hundred eighty-five workers from 3 private companies in Bogotá, DC voluntarily agreed to participate and signed informed consent (66.9% females). Participants' ages ranged from 18 to 87 years ($M = 38$ years, $SD = 11.0$), with 52.4% of participants being older than 35. They had different employment relationships (direct contract, provision of services, contractor, or temporary service company). The sample contained all levels of academic training: primary and high school complete/incomplete (40.4%), technicians or technologists (24.9%), professionals or with postgraduate degrees (19.9%); 14.8% of the participants did not report this information. Concerning socioeconomic strata, 54.2% belonged to low strata, 41.0% to middle strata, and 4.8% to high strata. The hierarchical level of participants within the companies was distributed as follows: 37.5% belonged to the managerial and professional levels, and 61.1% belonged to the assisting and operative levels. There was 1.4% of missing data in this variable.

Instruments

Work-related Acceptance and Action Questionnaire (WAAQ; Bond *et alia*, 2013; Spanish version by Ruiz & Odriozola González, 2014). The WAAQ is a questionnaire that aims to measure the degree of psychological flexibility in the work context. It consists of 7 items that are answered on a 7-point Likert-type scale (1= never true; 7= always true). The items reflect to what degree people can engage in goal-directed actions in the presence of aversive private experiences (e.g., "I am able to work effectively in spite of any personal worries that I have," "I can admit to my mistakes at work and still be successful," "I can work effectively, even when I doubt myself"). The instrument is scored by adding the score obtained on each of the items: the higher the score, the greater the degree of psychological flexibility in the workplace. The English version of the WAAQ has shown a one-factor structure and good internal consistency ($\alpha = .83$). Likewise, the WAAQ showed evidence of external, convergent, concurrent, and predictive validity. The instrument was translated into Spanish by Ruiz and Odriozola González (2014), following the recommendations proposed by Muñiz and Hambleton (1996). This translation also showed a one-factor structure and excellent internal consistency ($\alpha = .92$) in a Spaniard sample.

Acceptance and Action Questionnaire-II (AAQ-II; Bond *et alia*, 2011; Spanish version by Ruiz, Langer, Luciano, Cangas, & Beltrán, 2013). The AAQ-II is a general measure of psychological inflexibility consisting of 7 items that are answered on a Likert-type scale with seven response options (1= never true; 7= always true). The items reflect the refusal to experience aversive emotions and thoughts and the lack of ability to stay focused on the present moment by behaving in accordance with valued directions. The AAQ-II has shown a one-factor structure and evidence of discriminant, convergent, and predictive validity. The Spanish version of the AAQ-II obtained excellent internal

- consistency in Colombian samples ($\alpha = .91$) and showed a one-factor structure (Ruiz, Suárez Falcón, Cárdenas Sierra, Durán, Guerrero, & Riaño Hernández, 2016). In this study, the AAQ-II obtained excellent internal consistency ($\alpha = 0.92$).
- General Health Questionnaire-12* (GHQ-12; Goldberg & Williams, 1988; Spanish version by Rocha, Pérez, Rodríguez Sanz, Borrell, & Obiols, 2011). The GHQ-12 consists of 12 items that are answered on a 4-point Likert-type scale. The items refer to the degree to which emotional distress has been experienced in recent weeks. This instrument is frequently used as a screener for detecting psychological disorders, with higher scores reflecting higher levels of psychological distress (Ruiz, García-Beltrán, & Suárez Falcón, 2017). The Spanish version of the GHQ-12 showed a one-factor structure and excellent internal consistency ($\alpha = .90$) in Colombian samples. In this study, the GHQ-12 obtained an acceptable internal consistency ($\alpha = 0.81$).
- Utrecht Work Engagement Scale* (UWES; Schaufeli, Martínez, Pinto, Salanova, & Bakker, 2002; Spanish translation by Salanova, Schaufeli, Llorens, Peiro, & Grau 2000). The UWES is a scale comprising 15 items that measure work engagement as opposed to burnout through a 7-point Likert-type scale (1= never true; 7= always true). The UWES comprises three factors: Vigor, Dedication, and Absorption. The Spanish translation has shown appropriate psychometric properties in several studies (e.g., Serrano, Andreu, Murgui, & Martínez, 2019). In this study, the UWES obtained excellent internal consistency ($\alpha = 0.90$).
- Overall Job Satisfaction Scale* (OJS; Warr, Cook, & Wall, 1979; Spanish translation by Munduate, 1984). The OJS consists of 15 items that measure general job satisfaction. It is responded to on a 7-point Likert-type scale (1= very unsatisfied; 7= very satisfied) and comprises two subscales: Intrinsic Satisfaction and Extrinsic Satisfaction. The Spanish translation has shown good psychometric properties in several studies (e.g., Landa, López Zafra, de Antofiana, & Pulido, 2006). In this study, the OJS obtained an alpha of 0.93.
- Maslach Burnout Inventory-General Survey* (MBI-GS; Maslach, Jackson, & Leiter, 1996; Spanish translation by Moreno Jiménez, Rodríguez Carvajal, & Escobar Redonda, 2001). The MBI-GS comprises 16 items that are responded to on a 7-point Likert-type scale (0 = never; 6 = every day). It assesses three attitudes towards work that represent the experience of burnout: Emotional Exhaustion, Cynicism, and Professional Efficacy. High scores on Emotional Exhaustion and Cynicism and low scores on Professional Efficacy are indicators of burnout. The MBI-GS was designed to be administered in all types of works. The Spanish version of the MBI-GS reported a three-factor structure and good internal consistencies across subscales in Colombia (Bravo, Suárez Falcón, Bianchi, Segura Vargas, & Ruiz, 2021). In this study, the MBI-GS obtained alphas of .86, .72, and .79 for Emotional Exhaustion, Cynicism, and Professional Efficacy, respectively.

Procedure

The three companies where the participants worked provided authorization to implement the study. The study was presented to the participants during a more general evaluation of psychosocial risk. Participation was voluntary, and all participants provided written informed consent. The consent clarified elements related to the purpose of the study, voluntary participation, withdrawal at the time they considered appropriate, and group data analysis that would guarantee anonymity and confidentiality of the information.

The instruments were applied during working hours under the modality of self-completion. The questionnaire and the instruments were applied in groups of 20 to 25 participants per session. Depending on the logistics of each company, spaces were set aside for this purpose (e.g., training room, dining room, multiple classrooms).

Data Analysis

Before starting the data analysis, the dataset was examined for missing values, which were imputed using the LISREL© (version 8.71, Jöreskog & Sörbom, 1999)

matched response pattern. In this imputation method, the value substituted for the missing value of a single case is obtained from another case (or cases) with a similar response pattern on the remaining WAAQ items. Twenty-one WAAQ values were imputed (0.3% of the data).

Data analysis of the WAAQ was performed sequentially. First, corrected item-total correlations were calculated to explore if there were any items with low discriminative levels (correlations below .30). Secondly, the diagonally weighted least squares robust estimation method (DWLS robust) with polychoric correlations was used to perform the confirmatory factor analyses in LISREL© 8.71. We tested the fit of two alternative factor models: (a) the one-factor model found in Bond *et alia* (2013), (b) the one-factor model allowing the error terms of items 4 and 7 to be correlated. We tested this model because, when reviewing the wording of these items of the Spanish translation, we found that they mention the concept of interponer (i.e., “get in the way”). We followed this rationale beforehand because the fit of the one-factor model of the Spanish version of the AAQ-II significantly improved when allowing the correlation of the error terms of two items with similar wording.

The Satorra-Bentler chi-square test and the following goodness-of-fit indices were calculated for two alternative factor models: (a) the *Root Mean Squared Error of Approximation* (RMSEA), (b) the *Comparative Fit Index* (CFI), (c) the *Non-Normalized Fit Index* (NNFI), (d) the *Expected Cross-Validation Index* (ECVI), and (e) the *Standardized Root Mean Square Residual* (SRMR). According to Hu and Bentler (1999), RMSEA and SRMR values of 0.08 represent an acceptable fit, and values below 0.05 represent a very good fit to the data. Concerning CFI and NNFI, values above .90 indicate models that fit well, and values above .95 represent a very good fit to the data. Finally, lower values of ECVI indicate a better fit to the model.

Third, metric and scalar invariance across sociodemographic variables was performed through additional Confirmatory Factor Analyses (CFAs) following the guidelines of Jöreskog (2005) and Millsap and Yun-Tein (2004). We analyzed whether item factor loadings and intercepts were invariant across the sociodemographic variables. Analyzing the measurement invariance of latent variables or constructs across groups is relevant because it allows us to ensure that comparing said variables across them is valid. This analysis compares the relative fits of three increasingly restrictive models: the multi-group baseline, metric invariance, and scalar invariance models. The differences in RMSEA and CFI values across models were analyzed. The most restricted model was selected if the following criteria proposed by Cheung and Rensvold (2002) and Chen (2007) were met: (a) the difference in RMSEA ($\Delta RMSEA$) is less than 0.01; (b) the difference in CFI (ΔCFI) is equal to or greater than -0.01.

Lastly, the remaining statistical analyses were performed in SPSS19©. We computed the coefficient alpha of the WAAQ to analyze its internal consistency and the zero-order correlations of the WAAQ scores with the other measures administered in this study.

RESULTS

Table 1 shows the WAAQ items translated into Spanish, the descriptive data, and the corrected item-total correlations. All items showed a good discrimination level, with corrected item-total correlations ranging from .616 (Item 7) to .720 (Item 5). The coefficient alpha was .877 (95% CI [.865, .888]).

Table 2 shows the goodness-of-fit indexes obtained by the one-factor structure model in the CFA: $S-B\chi^2(14) = 141.923$, $p < .01$; $CFI = 0.984$, $NNFI = 0.976$, $SRMR = 0.050$,

Table 1. Corrected item-total correlations, descriptive data, and internal consistency of the WAAQ.

	Corrected item- Total correlation	<i>M</i> (<i>SD</i>)
1. Soy capaz de trabajar eficazmente aunque tenga preocupaciones personales [I am able to work effectively in spite of any personal worries that I have]	.66	5.71 (1.72)
2. Puedo admitir mis errores en el trabajo y aun así seguir siendo exitoso [I can admit to my mistakes at work and still be successful]	.68	5.93 (1.41)
3. Puedo trabajar de manera eficaz, incluso cuando estoy nervioso por algún motivo [I can still work very effectively, even if I am nervous about something]	.71	5.58 (1.53)
4. Mis preocupaciones no se interponen en mi camino hacia el éxito [Worries do not get in the way of my success]	.64	5.24 (2.00)
5. Soy capaz de comportarme según la situación requiera, sin que me afecte cómo me sienta [I can perform as required no matter how I feel]	.72	5.65 (1.56)
6. Puedo trabajar eficazmente, incluso cuando dudo de mí mismo [I can work effectively, even when I doubt myself]	.66	5.44 (1.75)
7. Mis pensamientos y sentimientos no se interponen en lo que debo hacer en mi trabajo [My thoughts and feelings do not get in the way of my work]	.62	5.36 (2.05)
Complete scale	$\alpha = .88$	38.91 (9.20)

Table 2. Goodness-of-fit indexes of the analyzed factor models (*N* = 985 participants)

	<i>S-B</i> χ^2 (<i>df</i>)	RMSEA [90% <i>CI</i>]	CFI	NNFI	SRMR	ECVI [90% <i>CI</i>]
One-factor model	141.923 (14)	0.096 [0.082, 0.111]	0.984	0.976	0.050	0.173 [0.138, 0.215]
One factor model with correlated error terms in items 4 and 7	27.184 (13)	0.033 [0.015, 0.051]	0.998	0.997	0.018	0.058 [0.047, 0.077]

Notes: CFI= comparative fit index; ECVI= Expected Cross-Validation Index; NNFI= Non-Normed Fit Index; RMSEA= Root Mean Square Error of Approximation; *S-B* χ^2 = Satorra-Bentler chi-square; SRMR= Standardized Root Mean Square Residual.

RMSEA= 0.096, 90% *CI* [0.082, 0.111]. The *CFI*, *NNFI*, and *SRMR* values indicated that the one-factor model obtained a very good fit to the data. However, the *RMSEA* value indicated a questionable fit. Importantly, the goodness-of-fit indexes improved, especially the *RMSEA*: *S-B* χ^2 (13)= 27.184, $p < .01$; *CFI*= .998, *NNFI*= .997, *SRMR*= 0.018, *RMSEA*= 0.033, 90% *CI* [0.015, 0.051] when allowing the error terms of items 4 and 7 to correlate. The chi-square difference test indicated that estimating the correlation between error terms of items 4 and 7 yielded a statistically significant better fit (*S-B* χ^2 (1)= 114.739, $p < .01$). Additionally, the ECVI value of the second model was significantly lower than the first model. According to these criteria, we selected the second model. Figure 1 shows the results of the standardized solution of the selected model.

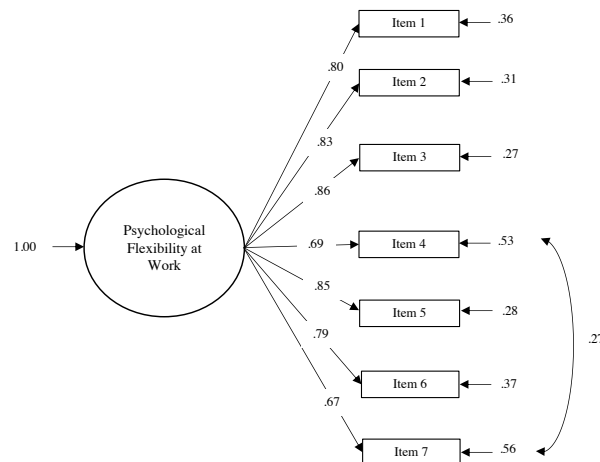


Figure 1. Completely standardized solution of the one-factor model with correlated error terms in items 4 and 7.

Table 3 shows that the criteria to claim for measurement invariance across gender were met because the changes in *RMSEA* and *CFI* were lower than 0.01. Regarding groupage, Table 3 indicates that the *CFI* criterion was met and marginally the *RMSEA*. Accordingly, we can reasonably assume metric and scalar invariance of the WAAQ across groupage. Similarly, when analyzing the metric invariance of the hierarchical level within the organization, the *CFI* criterion is met, and marginally the *RMSEA* is. Therefore, we can reasonably assume metric and scalar invariance across the hierarchical level of the employee. Lastly, the criteria to claim metric and scalar invariance were met regarding socioeconomic status because the changes in *RMSEA* and *CFI* were lower than .01.

Table 3. Measurement invariance across gender, groupage, hierarchical level within the organization, and socioeconomic status.

	Model	$S-B\chi^2$	df	RMSEA	$\Delta RMSEA$	CFI	ΔCFI
Measurement invariance across gender	MG baseline model	50.848	26	0.044		0.997	
	Metric invariance	71.256	33	0.049	-0.005	0.995	-0.002
	Scalar invariance	80.947	39	0.047	0.002	0.995	0.000
Measurement invariance across groupage	MG baseline model	41.731	26	0.035		0.998	
	Metric invariance	70.322	33	0.049	-0.013*	0.995	0.003
	Scalar invariance	79.631	39	0.047	0.002	0.994	0.001
Measurement invariance across hierarchical level	MG baseline model	41.939	26	0.036		0.998	
	Metric invariance	68.384	33	0.047	-0.011*	0.996	0.002
	Scalar invariance	76.963	39	0.045	0.002	0.996	0.000
Measurement invariance across socioeconomic status	MG baseline model	42.384	26	0.037		0.998	
	Metric invariance	63.236	33	0.044	-0.008	0.996	0.002
	Scalar invariance	70.373	39	0.041	0.003	0.996	0.000

Notes: CFI= Comparative Fit Index; ΔCFI = difference in CFI; MG= Multi-group; RMSEA= Root Mean Square Error of Approximation; $\Delta RMSEA$ = difference in RMSEA; $S-B\chi^2$ = Satorra-Bentler chi-square.

The WAAQ showed theoretically coherent correlations with related instruments (see Table 4). Specifically, the WAAQ correlated negatively with general psychological inflexibility as measured by the AAQ-II ($r = -.163$) and psychological distress as measured by the GHQ-12 ($r = -.199$). Regarding work-related variables, the WAAQ correlated positively with work engagement ($r = .261$ to $.333$), job satisfaction ($r = .169$), and professional efficacy ($r = .431$); and negatively with emotional exhaustion ($r = -.120$) and cynicism ($r = -.119$).

Table 4. Zero-order correlations between the WAAQ and other relevant self-report measures.

	r with WAAQ
AAQ-II	-.163
GHQ-12	-.199
UWES-Vigor	.333
UWES-Dedication	.284
UWES-Absorption	.261
OJS-Total	.169
OJS-Intrinsic	.175
OJS-Extrinsic	.160
MBI-Emotional Exhaustion	-.120
MBI-Cynicism	-.119
MBI-Professional efficacy	.431

Notes: All correlations were statistically significant at a $p < .001$; AAQ-II: Acceptance and Action Questionnaire-II; GHQ-12: General Health Questionnaire-12; MBI= Maslach Burnout Inventory; OJS= Overall Job Satisfaction; UWES= Utrecht Work Engagement Scale; WAAQ= Work-related Acceptance and Action Questionnaire.

DISCUSSION

Psychological flexibility is a relevant factor involved in work-related outcomes such as burnout, worksite stress, work engagement, professional efficacy, and job satisfaction (e.g., Bond *et alia*, 2013; Garner & Golijani-Moghaddam, 2021; Ruiz & Odriozola-González, 2017). Indeed, ACT interventions have been efficacious in preventing and reducing worksite stress and burnout (Dereix Calonge *et alia*, 2019; Flaxman & Bond, 2010; Moran, 2015; Prudenzi *et alia*, 2021; Towey-Swift *et alia*, 2022). Furthermore, the development of the WAAQ, a measure of psychological flexibility tailored to the work context, has significantly strengthened this research avenue (Garner & Golijani-Moghaddam, 2021). However, the psychometric properties of the Spanish version of the WAAQ have not been analyzed in Colombia, which makes it complex conducting studies in this country. Accordingly, this study aimed to analyze the psychometric functioning of the WAAQ in a large Colombian sample of employees.

The results of the present study suggest that the WAAQ is a valid and reliable measure of work-related psychological flexibility in Colombian samples. Specifically, the WAAQ showed good internal consistency ($\alpha = .88$), and all items obtained high corrected item-total correlations. The CFAs found that the one-factor structure obtained a good fit to the data, which coincides with previous studies that analyzed the factor structure of the WAAQ (Bond *et alia*, 2013; Pinto *et alia*, 2015; Ruiz & Odriozola-González, 2014; Xu *et alia*, 2018). To our knowledge, this study was the third one, after the initial validation by Bond *et alia* (2013) and the study conducted by Pinto *et alia* (2015) in Brazil, to conduct CFAs to analyze the factor structure of the WAAQ. Furthermore, we conducted these analyses with the largest sample of employees to date and analyzed the measurement invariance of the factor model across several sociodemographic variables (i.e., gender, groupage, and socioeconomic status) and the hierarchical level in the organizations. Overall, scalar invariance can be reasonably assumed across these mentioned variables. These findings are also a strength of the current study because the only test of measurement invariance was conducted by Bond *et alia* (2013) across two different samples of employees. This is important because evidence of measurement invariance is needed to compare mean scores across different subsamples of employees (Greiff & Scherer, 2018).

In this study, the fit of the one-factor model improved considerably by allowing the error terms of items 4 and 7 to correlate. When reviewing the wording of items 4 and 7 of the Spanish translation, we found that they mention the concept of interponer (i.e., “get in the way”). This coincidence may have caused the error terms of these items to be correlated. It is worth noting that Ruiz and Odriozola-González (2014) did not find this effect because they only conducted an exploratory factor analysis of the Spanish translation of the WAAQ. Interestingly, the correlation of error terms in items 4 and 7 was not found in the validation study of the WAAQ (Bond *et alia*, 2013), although both items also contain the same expression (“do not get in the way”). Further studies with the Spanish version of the WAAQ should analyze whether it is necessary to allow the correlation between items 4 and 7.

The WAAQ showed negative correlations with general psychological inflexibility as measured by the AAQ-II and psychological distress as measured by the GHQ-12. The sign of the correlations was as expected, indicating that the greater the psychological flexibility at work, the lower the degree of general psychological inflexibility and the lower the degree of psychological distress. The values of the correlations were small but

equivalent to those obtained in previous studies with these instruments (e.g., Bond *et alia*, 2013; Holmberg *et alia*, 2019; Xu *et alia*, 2018). More specifically, the correlation between the WAAQ and AAQ-II was similar to that found in Ruiz and Odriozola-González (2014). The WAAQ also showed the expected pattern of correlations with burnout aspects as measured with the MBI-GS. These correlations were similar to the ones found in a study conducted in Spain by Ortiz Fune *et alia* (2020). Lastly, the WAAQ showed positive correlations with work engagement and job satisfaction. Again, these correlations were similar to the ones found in previous studies (e.g., Bond *et alia*, 2013; Holmberg *et alia*, 2019; Xu *et alia*, 2018). In summary, the WAAQ has shown evidence of convergent construct validity in this study.

Some limitations of this study are worth mentioning. Firstly, the sample consisted of employees from only three private companies, which limits the generalizability of the results. Secondly, the WAAQ scores were correlated only with self-report measures, which might inflate the relationship among variables due to a method effect. Thirdly, we have not explored the WAAQ treatment sensitivity. Although the WAAQ has been used in intervention studies as a process measure (Towey-Swift *et alia*, 2022), we are unaware of the existence of a systematic analysis of its treatment sensitivity, which is relevant in the measurement of psychological flexibility (Benoy, Knitter, Schumann, Bader, Walter, & Gloster, 2019). Thus, future studies might recruit participants from more diverse types of employment (e.g., public workforce, autonomous workers, etc.), use behavioral measures (e.g., sick days, job performance, etc.), and explore the sensitivity of the WAAQ to psychological interventions focused on the work context compared to more general measures of psychological flexibility.

In conclusion, the WAAQ seems to be a reliable self-report instrument for the Colombian working population. Likewise, the WAAQ has shown evidence of construct validity due to its one-factor structure and evidence of convergent structure validity based on theoretically consistent relationships with other related variables.

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