

## Adaptation and validation of the Spanish Version of the “Survey Work-Home Interaction – NijmeGen” (SWING) to Spanish speaking countries

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**Título:** Adaptación y validación de la versión española de la “Survey Work-Home Interaction – NijmeGen” (SWING) en países hispanohablantes.

**Resumen:** El propósito de este estudio es adaptar y validar la “Survey Work-Home Interaction – NijmeGen” (SWING), desarrollada por Geurts y colaboradores, a países de habla hispana (SWING-SSC). Con el fin de analizar las propiedades psicométricas del cuestionario, se llevó a cabo un análisis factorial confirmatorio (AFC) con una muestra de 203 empleados de diferentes países de habla hispana. La validez de criterio se puso a prueba mediante el examen de las correlaciones entre el SWING-SSC y otras variables teóricas relevantes: salud, conflicto de rol, claridad de rol y apoyo del supervisor. Finalmente, se puso a prueba la fiabilidad analizando la consistencia interna de las escalas. Los análisis realizados indican que el SWING-SSC tiene buenas propiedades psicométricas. Además, los resultados apoyan la relación del constructo con la salud, el conflicto de rol, la claridad de rol, y el apoyo del supervisor. Este estudio ofrece evidencia de una medida del equilibrio entre trabajo y vida que contribuye al fomento de las condiciones adecuadas en el lugar de trabajo, para reducir el conflicto entre las dos esferas de la vida profesional y personal, y para fomentar las relaciones positivas.

**Palabras clave:** Survey Work-Home Interaction SWING; equilibrio vida-trabajo; análisis factorial confirmatorio; salud; características del puesto.

**Abstract:** The purpose of this study is the adaptation and validation of the “Survey Work-Home Interaction – NijmeGen” (SWING) developed by Geurts and colleagues to Spanish speaking countries (SWING-SSC). In order to analyze the questionnaire’s psychometric properties, confirmatory factor analysis (CFA) was carried out with a sample of 203 employees from various Spanish-speaking countries. Criterion related validity was tested by examining correlations between the SWING-SSC, and the theoretically relevant variables: health, role conflict, role clarity and supervisor support. Finally, reliability was tested analyzing the internal consistency of the scales.

The analyses carried out indicate that SWING-SSC has good psychometric properties. In addition, the present results support the relation of the construct with health, role conflict, role clarity, and supervisor support. This study offers evidence for a sound work-life balance measure that contributes to encourage adequate conditions in the workplace, to reduce the conflict between the two spheres of professional and personal life, and to enhance positive relationships.

**Key words:** Survey Work-Home Interaction SWING; work-life balance; confirmatory factor analysis; health; job characteristics.

### Introduction

During recent decades, the issue of work-life balance has received extensive attention and has been subject to increasing research (Eby, Casper, Lockwood, Bordeaux, & Brinley, 2005). Nevertheless, a vast amount of literature related to work-life balance shows, following Reiter (2007), a lack of agreement over its definition. In this sense, it is possible to distinguish three main perspectives on the issue –*situationism*, *role theory* and *effort recovery model*. Each one can be seen as relevant to achieving balance. This work focuses on the effort recovery model, because it makes “the construct clearer, and easier to interpret, which will contribute to richer theory of work and family” (Zhang et al., 2012, p. 410).

The *effort recovery (E-R) model* (Meijman & Mulder, 1998) differentiates between the direction of influence (i.e. influence of work on private life, and vice versa) and the quality of influence (i.e. negative versus positive influence). This model expects that effort expended at work/home have both, benefits and psychological and physiological costs. These costs are thought to be reversible, as long as the person has sufficient opportunities for recovery. However, if there is insufficient opportunity for recovery, then negative load effects may accumulate, resulting in a negative spillover to the work or home domain (Geurts, Kompier, Roxburgh,

& Houtman, 2003; Geurts et al., 2005; van der Hulst & Geurts, 2001).

Drawing from this theoretical perspective, Geurts et al. (2005) define work-home interaction as a process in which a worker’s functioning (behavior) in one domain (work or home) is influenced by (negative or positive) load reactions that have built up in the other domain (home or work).

Only a few instruments have been exclusively developed for measuring positive work-family interaction (Carlson, Kacmar, & Williams, 2000; Kirchmeyer, 1992) or for measuring both negative and positive interaction (Grzywacz & Marks’s MIDUS scale, 2000 and Geurts et al., SWING scale, 2005), due to a lacking adequate theoretical framework (Frone, 2003).

Even though there is awareness that the current knowledge of work-family interface is incomplete without an understanding of the benefits and detriments of participating in both work and family, there is scarce research that examines it (Hanson, Hammer, & Colton, 2006). Thus, as Greenhaus and Powell (2006) point out, there is a need for construct clarification, theory building, and measurement tool development. This study contributes to the increase of research on work-home interaction.

The Survey Work-Home Interaction-NijmeGen (SWING) is based on the effort recovery (E-R) model. It proposes four subscales according to the direction of the interaction (work-family or family-work) and the type of relationship between the two domains (positive or negative). These resulting subscales are negative work-home interaction (WHI), negative home-work interaction (HWI), positive work-home interaction (WHI), and positive home-work in-

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teraction (HWI). The scale has been validated in several European countries like France (Lourel, Gana, & Wawrzyniak, 2005) and Spain (Moreno-Jimenez, Sanz-Vergel, Rodríguez-Muñoz, & Geurts, 2009) showing good psychometric properties and confirming a four-dimensional model.

The current research consists of an adaptation of the "Survey Work-Home Interaction-Nijmegen" (SWING) originally developed by Geurts and colleagues (2005) into a version for Spanish Speaking Countries (SWING-SSC) and its validation. The objective is twofold: on one hand, to prove the validity of the construct; on the other hand, to prove the internal consistency of the scale. Therefore, its factorial structure evidence is based on two sources: the confirmation of the factorial-structure of the work-life balance concept of the SWING-SSC applying confirmatory factor analysis (CFA) and, based on results of recent studies (Greenhaus & Allen, 2011) on the test of the criterion validity using theoretically important external variables (health, role conflict, role clarity and supervisor support). We expect strong associations between negative WHI/ negative HWI with decreased levels of health (Hanson et al., 2006; van Steenbergen & Ellemers, 2009), positive relation between supervisor support and positive WHI (McCarthy, Darcy, & Grady, 2010; Taylor, Del Campo, & Blancero, 2009). We expect positive relation between role conflict and negative WHI (Bacharach, Bamberger, & Conley, 1991; Carlson & Kacmar, 2000; Greenhaus & Beutell, 1985; Katz & Kahn, 1978; Rau & Hyland, 2002), and positive relation between role clarity and positive WHI (Kahn, Wolfe, Quinn, Snoek & Rosenthal, 1964; Lang, Thomas, Bliese, & Adler, 2007; Matsui, Ohsawa, & Onglatco, 1995; Rothbard, 2001; Rothbard & Dumas, 2006; Rothbard & Edwards, 2003). Reliability was tested analyzing the internal consistency of the scales by using Cronbach's  $\alpha$ .

## Method

The objective of this study was to analyze the psychometric properties (construct validity, criterion validity and internal consistency) of the SWING-SSC version. A confirmatory factor analysis was conducted in order to validate the structure of the set of the SWING-SSC, criterion related validity was tested examining by correlations between the SWING-SSC and health, role conflict, role clarity, and supervisor support and Cronbach's  $\alpha$  was used to analyze internal consistency.

### Participants

The sample is composed of 203 employees whose mother tongue is Spanish, drawn from various organizations located in numerous Spanish-speaking countries on the American Continent. It is made up of 116 women (57.4%) and 86 men (42.6%), with a mean age of 32.19 years ( $SD = 12.27$ ). The nationalities of the participants include Argentinean (57.9%), Peruvian (17.8%), Venezuelan (5.4%), American

(5.4%), Colombian (4.5%), Mexican (3.5%), Ecuadorian (2.0%), Paraguayan (1.5%), Bolivian (0.5%), Panamanian (0.5%), Brazilian, (0.5%), and Nicaraguan (0.5%). Of the participants from this sample, 23.3% live alone, 37.1% live with a partner, 39.6% live with their parents and 28.7% have children. Regarding their education level, 17.3% have high school education and 82.2% have college or higher education. As to the participants' employment 23.3% are in the commercial sector, 4.7% in the industrial sector, 14.5% in services, 12.4% in education, 13.5% in administration, and 26.4% not do specify any professional sector.

### Instruments

To measure work-home interaction the Spanish speaking countries version of the SWING was used (SWING-SSC). On this scale, the participants should indicate how often they experienced positive and negative interactions between work and home, according to a Likert type scale with scores ranging from 1 (*strongly disagree*) and 5 (*strongly agree*). The SWING-SSC contains 27 items, 9 items for the Negative WHI (e.g. "Your work obligations make it difficult for you to feel relaxed at home") and 6 items for each of the three other dimensions: Negative HWI (e.g. "Problems with your spouse/family/friends affect your job performance"), Positive WHI (e.g. "You are better able to interact with your spouse/family/friends as a result of the things you have learned at work") and Positive HWI (e.g. "You manage your time at work more efficiently because at home you have to do that as well").

The original instrument has been theoretically developed and validated by Geurts et al. (2005). The authors show for the SWING good overall internal consistency (Cronbach's  $\alpha = .80$ ) and good fit to four-dimensional structure ( $\chi^2 = 600.7$ ;  $df = 203$ ,  $NNFI = .91$ ,  $RMSEA = .06$ ,  $CFI = .92$ ). For each dimension, Cronbach's  $\alpha$  is: Negative WHI = .84, Negative HWI = .75, Positive WHI = .75, Positive HWI = .81 (Geurts et al., 2005). Recently, the scale has been validated in several European countries like France (Lourel et al., 2005), Spain (Moreno-Jimenez et al., 2009) and Poland (Mościcka-Teske & Merecz, 2012) also showing good psychometric properties and adjustment (Cronbach's  $\alpha = .83$  and  $GFI = .98$ ,  $AGFI = .98$ ,  $NFI = .97$ ,  $RMR = .03$  for the Spanish version; Cronbach's  $\alpha = .80$  and  $CFI = .90$ ,  $RMSEA = .048$ , for the French version; Cronbach's  $\alpha = .79$  and  $CFI = .92$ ,  $RMSEA = .06$ ,  $NNFI = .91$ , for the Polish version).

In order to measure health, the short version of the General Health Questionnaire (GHQ-12) (Goldberg, 1972) in its Spanish version (Lobo & Muñoz, 1996) was used. Participants indicate how often they experienced symptoms that reflect psychological tension according to a Likert type scale with scores ranging from 1 (*more than usual*) to 5 (*much less than usual*). This scale was reliable in Hughes and Parkes' (2007) investigation with Cronbach's  $\alpha$  coefficient of .90. The GHQ-12 scale has two dimensions: social dysfunction

and anxiety/depression. The social dysfunction dimension is assessed by six items to evaluate the extent to which a person feels they have been able to cope properly with daily activities. Some examples of the questions are “have you been able to successfully tackle your problems?” and “were you able to concentrate well on what you did?”. The anxiety/depression dimension is assessed by six items to evaluate the degree to which the individual has felt anxious and depressed in recent weeks. Some examples of the questions are “have your concerns made you lose much sleep?” and “have you felt unhappy and depressed?”.

Role conflict and role clarity were analyzed using the scales developed by Quijano, Navarro, Yepes, Berger, and Romeo (2008) which show good psychometric properties. The role conflict scale measures the incompatibility of requirements and expectations from the role, where compatibility is judged based on a set of conditions that impact role performance. This dimension is assessed by three items (e.g. “Sometimes I find myself in situations where my bosses require me to do contradictory behaviors”). The role clarity dimension measures the degree to which the individual has experiences of a clear definition of their role expectations, and the requirements/methods to complete their job tasks. This dimension is assessed by three items (e.g. “I clearly know what is expected of me in my current job”). Role conflict and role clarity scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), and reliability with Cronbach’s  $\alpha$  coefficient was .75, for the role conflict and .80 for the role clarity scale (Romeo, Yepes, & Berger, 2010).

To measure the supervisors’ characteristics, the Spanish Human System Audit Transformational Leadership Questionnaire (HSA-TFL) Short-scale was used. This scale has good psychometric properties (Berger, Yepes, & Quijano, 2007; Berger, Romeo, Yepes, & Guardia, 2012) with Cronbach’s  $\alpha$  coefficient of .95. The HSA-TFL Short-scale is a one-dimensional scale for screening based on Bass’ (1985) four theoretical dimensions with eight items, two for each theoretical dimension: individualized consideration, intellectual stimulation, inspirational motivation, and idealized influence. Items of individualized consideration measure the degree to which the supervisor attends and listens to their subordinates’ concerns and needs (e.g. “My supervisor worries about training those who need it”). Items of intellectual stimulation measure the degree to which the supervisor challenges assumptions, takes risks, and solicits subordinates’ ideas (e.g. “My supervisor makes me solve problems based on reasoning and evidence”). Items of inspirational motivation measure the degree to which the supervisor articulates a vision that is appealing and inspiring to subordinates (e.g. “My supervisor presents things in an approach that encourages me”). Items of idealized influence measure the degree to which the supervisor provides a role model for high ethical behavior, instills pride, and gains respect and trust (e.g. “I am confident in my supervisor’s ability to overcome any obstacle”). Items were scored on a 5-point Likert-type scale ranging from: 1 = *I strongly disagree* to 5 = *I strongly agree*.

## Procedure

The SWING scale was translated following the guidelines provided by the International Test Commission (ITC, 2010). The first phase of the process consisted on the translation of the scale into Spanish by a team of investigators who were experts in the field. It is important to note that, considering the linguistic differences among different Spanish speaking populations, a standard Spanish was used, that is, the lowest common denominator of all varieties of Spanish. We have paid special attention to issues such as cultural nuances, colloquial phrases, idiomatic expressions, and cultural differences in the interpretation of many terms. The assessment of the experts ensures terminological accuracy.

Then, a discussion group made up of three experts was conducted. They discussed the formulation of each of the items translated and reformulated some of them according to the agreed criteria, looking for the conceptual equivalence of concepts and concerns in the different Spanish speaking countries. Lastly, following the recommendations of the literature (e.g. Wutke & Dennis, 2007), a back translation was conducted. The differences that were found between the original and the translated version were solved by means of discussion, reaching an agreed final version.

The questionnaires were administered with the help of an internal manager at the organizations after obtaining their consent. After an information session held by a member of the research team, the questionnaires were given online to related specific units of the organizations and completed anonymously by volunteers who did not receive any compensation for their participation.

## Data Analysis

Confirmatory Factor Analysis (CFA) through Structural Equation Modeling (SEM) was performed using Lisrel 8.8 (Jöreskog & Sörbom, 1996). The Satorra-Bentler Scaled Chi-square (SBS  $\chi^2$ ) was chosen as estimator procedure due to non-normal distribution of the variables and the small sample size (Curran, West, & Finch, 1996). In order to verify the fit of the proposed model, the goodness of fit was evaluated through the following indicators of adjustment: Chi-square ( $\chi^2$ ) value, as well as the Root Mean Square Error of Approximation (RMSEA), the Normed Fit Index (NFI), the Non-Normed Fit Index (NNFI), the Comparative Fit Index (CFI), the Standardized Root Mean Square Residual (SRMR), and the Adjusted Goodness of Fit Index (AGFI).

Criterion validity was measured by analyzing the existing correlation between the four dimensions of the SWING-SSC scale with other theoretically related constructs such as health, role clarity, role conflict and supervisor support. Cronbach’s  $\alpha$  was used to analyze internal consistency.

## Results

### Descriptive Statistics

The descriptive statistics of the SWING-SSC questionnaire can be observed on Table 1. The highest means correspond to the positive interaction subscales. Specifically, the item 23, which belongs to the subscale Positive HWI, has the highest value ( $M = 3.87$ ). The negative interaction subscales have the lowest mean values, being the item 10 the one with the lowest value ( $M = 1.90$ ). The variables in the negative interaction have a positive skewness and the variables in the positive interaction have a negative skewness.

**Table 1.** Descriptive Statistics of the SWING-SSC

Items	<i>M</i>	<i>SD</i>	Skewness	Kurtosis
Item 1	2.41	1.07	0.56	- 0.36
Item 2	2.21	1.16	0.62	- 0.75
Item 3	2.33	1.11	0.37	- 0.99
Item 4	2.61	1.24	0.23	- 1.18
Item 5	2.61	1.17	0.27	- 0.92
Item 6	2.45	1.13	0.40	- 0.82
Item 7	2.46	1.15	0.48	- 0.73
Item 8	2.41	1.04	0.38	- 0.65
Item 9	2.77	1.21	0.16	- 1.02
Item 10	1.90	0.85	0.76	0.02
Item 11	2.06	0.97	0.74	- 0.14
Item 12	2.08	0.92	0.59	- 0.41
Item 13	2.35	1.09	0.50	- 0.74
Item 14	1.98	0.91	0.80	0.19
Item 15	2.03	1.04	1.01	0.45
Item 16	3.74	0.95	-0.65	0.17
Item 17	3.63	1.03	-0.70	0.16
Item 18	3.03	1.04	-0.06	- 0.30
Item 19	3.03	1.00	-0.13	- 0.23
Item 20	3.25	1.06	-0.21	- 0.62
Item 21	2.92	1.00	-0.15	- 0.60
Item 22	3.75	0.98	-0.94	0.75
Item 23	3.87	0.96	-1.14	1.47
Item 24	2.94	1.01	-0.04	- 0.39
Item 25	2.96	1.02	-0.02	- 0.22
Item 26	3.06	1.05	-0.08	- 0.51
Item 27	3.53	0.98	-0.57	- 0.20

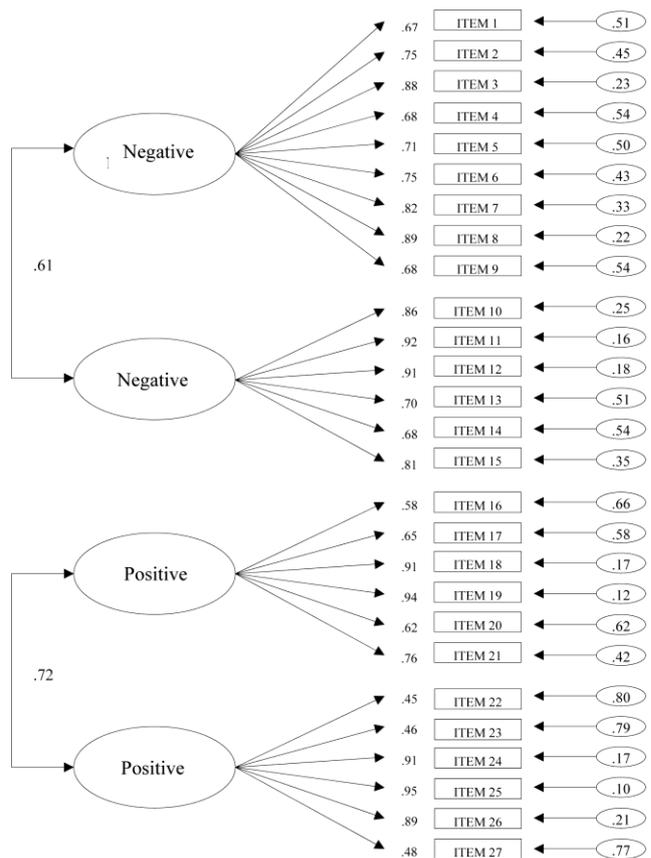
### Confirmatory Factor Analysis

The general results of Confirmatory Factor Analysis

**Table 2.** Goodness of Fit Statistics of Confirmatory Factor Analysis

df	SBS $\chi^2$	$\chi^2/df$	RMSEA	NFI	NNFI	CFI	SRMR	AGFI
318	534.167	1,68	.0658	.927	.966	.969	.0871	.604

show an acceptable goodness of fit to the theoretical model according to the Path Diagram of Figure 1. More than three indicators measure all latent factors, cross-loadings do not exist and latent factors are correlated. According to Geurts et al. (2005), a rule of thumb is that items should have a loading of at least .35 on the presumed factor in order to be retained in a fitted model. In this case, results reveal that all standardized factor loadings are moderate to high ( $> .45$ ). In that sense, it is possible to say that all these indicators prove that the model meets the conditions for identification.



**Figure 1.** Path Diagram with Standardized Weights and Measurement Errors of Each Item

Table 2 shows the general results of this model. Although the chi-square goodness-of-fit test could have been employed it was decided, given that type I error increases with sample size, to use other indicators such as the root mean squares residual (RMR), root mean square error of approximation (RMSEA), goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI) and the comparative fit index (CFI). Results show that the model adequately represents the observed data.

### Criterion Validity

The correlation analysis indicates as expected, and as shown in Table 3, that the two types of negative interaction are negatively correlated with health. Regarding the relationship between work-home interaction and job characteristics, Negative WHI and HWI positively correlates with role conflict. Role clarity correlates positively with Positive WHI and negatively with Negative WHI. Finally Positive WHI and HWI were positively correlated with supervisor support.

Moreover, the results showed significant correlations between the components of negative interaction on the one hand ( $r = .49, p < .01$ ), and the components of positive interaction on the other hand ( $r = .68, p < .01$ ). However, the two types of negative interaction showed no correlation with the positive interactions.

### Reliability

The reliability of the questionnaires was examined through Cronbach's  $\alpha$  Index. The general Cronbach's  $\alpha$  for the total SWING-SSC questionnaire was .84. As it is shown in Table 3, the obtained values for each dimension range from .85 to .90. The internal consistency obtained of the theoretically relevant variables are also strong. The General Health Questionnaire (GHQ) has an  $\alpha$  of .85, the Role Conflict and Role Clarity scales have an  $\alpha$  of .85 and .86 respectively, and the Spanish Human System Audit Transformational Leadership Questionnaire (HSA-TFL) has an  $\alpha$  of .94. According to the usual criteria, these coefficients of reliability are indicative of the internal consistency of the responses across the set of items (Schumacker & Lomax 2004; Muñiz 1992).

**Table 3.** Means, Standard Deviations, Correlations, and Reliabilities of the Studied Variables.

Variables	M	SD	1	2	3	4	5	6	7	8
Negative WHI	2.47	0.85	(.90)							
Negative HWI	2.07	0.76	.495*	(.88)						
Positive WHI	3.27	0.78	-.004	.162	(.87)					
Positive HWI	3.35	0.75	.084	.159	.684*	(.85)				
Health	1.93	0.47	-.423*	-.372*	.070	-.01	(.85)			
Role Clarity	2.54	0.99	-.259*	-.126	.265*	.128	-.219*	(.85)		
Role Conflict	3.77	1.08	.480*	.419*	.043	.121	.347*	-.357*	(.86)	
Supervisor Support	3.54	0.85	-.086	.067	.349*	.267*	-.188	.406*	-.322	(.94)

Note: Internal Reliabilities are in Parentheses; \*  $p < .01$

### Discussion

The purpose of the present research study was to validate the SWING-SSC questionnaire originally developed by Geurts et al. (2005). Evidence for validity of this version was provided based on the internal structure, through factorial validity, relations with other theoretically relevant variables, through criterion validity, and internal consistency. The analyses carried out indicate that the Spanish Speaking Countries version of the SWING has good psychometric properties.

The results of the CFA confirmed a four-factor-structure as proposed in the original version from Geurts et al. (2005). These results are also in line with the French adaptation carried out by Lourel et al. (2005), the Spanish adaptation carried out by Moreno-Jimenez et al. (2009), and the Polish adaptation carried out by Mościcka-Teske and Merez (2012). Specifically, the SWING-SSC's four-factor model assumes that the components of negative and positive interactions are uncorrelated. The results are in line with previous research works that show that the components of the negative and positive interactions are independent (Bakker & Geurts, 2004; Gryzwacz & Marks, 2000). Thus, the conflict and facilitation of personal and professional life can be viewed as independent constructs rather than opposite sides of the same coin.

The SWING-SSC's four components resulted in having

significant correlations with different measures related to work and family and indicators of health, role conflict, role clarity and supervisor support. In this sense, following previous studies, such as Frone, Yardley, and Markel (1997), Schmidt, Colligan and Fitzgerald (1980), Parasurman and Simmers (2001), Stephens, Franks, and Atienza (1997) and van Steenbergen and Ellemers, (2009), it was hypothesized that negative WH and HW interaction would be negatively related to health and that positive WH and HW interaction would be positively related to health. In accordance with this study's expectations and with previous research, the two negative SWING-SSC scales are negatively correlated with health. This finding suggests that employees who experience high levels of negative interaction between their work and home have lower levels of mental health, including social dysfunction, anxiety, and depression (McKee-Ryan, Song, Wanberg, & Kinicki, 2005). Notwithstanding the above findings, no significant relation was found between positive interaction and positive health outcomes.

Regarding the relationship of work-home interaction with job characteristics, previous research suggests that role conflict and role clarity are related to work-home interaction. In our study, role conflict has been proved to correlate with negative work-home interaction (Carlson & Kacmar, 2000; Katz & Kahn, 1978; Rau & Hyland, 2002). Additionally, our results confirm that role clarity correlates with positive interaction (Lang et al., 2007; Rothbard & Edwards, 2003).

Finally, our results confirm that high levels of supervisor

support reported higher levels of positive work-home interaction (Beauregard & Henry, 2009; Grzywacz & Marks, 2000; Taylor et al., 2009; McCarthy et al., 2010).

In regard to the reliability of the scores of the Spanish Speaking version of the SWING, the scale has a very good internal consistency. The reliability scores are comparable to those of the original version and are located within the range observed in other investigations that have validated this instrument (Dikkers et al., 2007; Lourel et al., 2005; Moreno-Jimenez et al., 2009; Taris et al., 2006).

Summing up, the obtained results indicate that the adaptation of the SWING to the Spanish Speaking Countries (SWING-SSC) shows satisfactory psychometric properties, and thus, it can be considered a valid and reliable measure for the evaluation of the interaction between work and family. The SWING questionnaire is considered by Geurts et al. (2005) the first instrument on work-home interaction that was developed for and validated on samples drawn from a European country. In this research, the questionnaire has been validated in Latin American countries, as well.

### Limitations and Future Research

Despite the strengths mentioned above, one of the limitations of the study is related to data collection. Self-reports from workers were used to examine the participants' work-home interaction and its associations with external variables.

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