

## Appreciation in Relationships (AIR) Scale: Preliminary Evidence of Validity and Accuracy in Brazil

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### Abstract

This study aimed to adapt the Appreciation in Relationships (AIR) scale for the Brazilian context and to seek evidence of validity and accuracy, based on evidence of construct validity (i.e. factor analysis and internal consistency). The sample consisted of 233 people in amorous relationships from 15 Brazilian states, over 18 years of age. The majority were women (52.4%), even though a population with a homogeneous composition was sought to respond to the instruments: AIR and Sociodemographic Questionnaire. Through Structural Equation Modeling, with Confirmatory Factor Analysis, the theory regarding the existence of two factors was confirmed. The two-factor model presented the following fit indices:  $\chi^2 / df = 2.70$ , CFI = 0.97, TLI = 0.96, RMSEA (90%CI) = 0.08 (0.07-0.10). It was concluded that the AIR presents acceptable evidence regarding the psychometric parameters in the context, and can be used in further studies on appreciation in relationships.

**Keywords:** Appreciation, relationship, validation.

### Escala de Apreciação em Relacionamentos (AIR): Evidências Preliminares de Validade e Precisão no Brasil

### Resumo

Este estudo objetivou adaptar e buscar evidências de validade e precisão da escala de Apreciação nos Relacionamentos (AIR) para o contexto brasileiro, com base em evidências de validade de construto, como a análise fatorial e a consistência interna. A amostra foi composta por 233 pessoas em relacionamento amoroso de 15 estados brasileiros, maiores de 18 anos, sendo a maioria mulheres

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(52,4%), mesmo com a busca por uma população com composição homogênea. Os participantes responderam aos instrumentos: a AIR e o Questionário Sociodemográfico. Através da Modelagem por Equações Estruturais, com a Análise Fatorial Confirmatória, foi confirmada a estrutura da medida sobre a existência de dois fatores, com os seguintes índices de ajuste:  $\chi^2 / gl = 2,70$ , CFI = 0,97, TLI = 0,96, RMSEA (IC90%) = 0,08 (0,07-0,10). Conclui-se que a AIR revela evidências preliminares aceitáveis quanto aos parâmetros psicométricos no contexto brasileiro, podendo ser utilizada em pesquisas sobre a apreciação nos relacionamentos no Brasil.

**Palavras-chave:** Apreciação, relacionamento, validação.

## **Escala de Apreciación en Relaciones (AIR): Evidencias Preliminares de Validez y Precisión en Brasil**

### **Resumen**

Este estudio objetivó adaptar y buscar evidencias de validez y precisión de la escala de Apreciación en las Relaciones (AIR) para el contexto brasileño, con base en evidencias de validez de constructo, como el análisis factorial y la consistencia interna. La muestra fue compuesta por 233 personas en relación amorosa de 15 estados brasileños, mayores de 18 años, siendo la mayoría mujeres (52,4%), incluso con la búsqueda por una población con 3/8 composición homogênea para responder a los instrumentos, el AIR y el Cuestionario Sociodemográfico. A través del Modelado por Ecuaciones Estructurales, con el Análisis Factorial Confirmatorio, se confirmó la teoría sobre la existencia de dos factores. El modelo bifactorial presentó los siguientes índices de ajuste:  $\chi^2 / gl = 2.70$ , CFI = 0.97, TLI = 0.96, RMSEA (IC90%) = 0.08 (0.07-0.10). Se concluye que AIR revela evidencias aceptables en cuanto a los parámetros psicométricos en el contexto, pudiendo ser utilizada en más investigaciones sobre la apreciación en las relaciones.

**Palabras clave:** Apreciación, relación, validación.

Positive Psychology focuses on improving the knowledge of constructs that strengthen the development of people's positive dimensions (Pires, Nunes, & Nunes, 2015). When considering the historical context and according to the literature of the area, it can be verified that before Psychology acted through a curative model, focusing on pathologies and negative issues, neglecting the positive aspects of the individual. However, in the 1990s Martin Seligman, along with other scholars, began to undertake quantitative studies focused on the forces and virtues that are inherent to people, presenting a new focus for research in Psychology (Pacico & Bastianello, 2014; Pires et al., 2015; Seligman, 2002).

Positive Psychology cannot be considered to have emerged only in the last decade of the twentieth century (Pacico & Bastianello, 2014), since authors such as Rogers and Maslow already used aspects that are attributed to the area in

their practices in Humanistic Psychology. The fundamental difference between the approaches is that Positive Psychology seeks to prove its findings scientifically and empirically through well-established scientific methods (Scorsolini-Comin, 2014). Over time Positive Psychology has developed as a great movement, with volumes and manuals written and published, as well as conferences that bring together researchers from different regions of the world. Various scholarships have facilitated the research and collaboration of scholars from various countries, with Positive Psychology courses emerging in dozens of universities (Gable & Haidt, 2015).

According to Seligman (2002) three pillars can be defined that support Positive Psychology: (1) the study of positive emotions; (2) the study of positive traits or qualities, strengths and virtues; and (3) the study of positive foundations, which support the other two pillars. The latter are institutions such as democracy, family and

freedom. These pillars direct Positive Psychology to three areas of scientific investigation, which are located at three levels: subjective, individual and group (Seligman & Csikszentmihalyi, 2000).

Regarding the studies of the area, specifically in Brazil, Pires et al. (2015) in a review of Positive Psychology in Brazil (between 2000 and 2014), indicated an increase in production, especially in the period between 2008 and 2013, with 2008 being the peak year for publications. They concluded that Brazil is going through a phase of increasing scientific production in Positive Psychology, mainly referring to the construction, adaptation and validation of instruments. However, they highlighted that the diversification of the constructs evaluated is important.

In seeking to contribute to the area, this article aims to address appreciation, which is presented by Gordon, Impett, Kogan, Oveis, and Keltner (2012) as an aspect of gratitude. This is presented as moral affect, which results and stimulates the moral behavior of people. McCullough, Kilpatrick, Emmons, and Larson (2001) who presented gratitude from this perspective, and defended its three moral functions: to make people aware that they benefited from other people's pro-social behaviors; to motivate the individual to behave prosocially toward the benefactor, other people, or both, and to encourage the benefactor to behave morally in the future (McCullough et al., 2001).

Accordingly, appreciation presents itself as an important factor in the maintenance of amorous relationships, as it serves as a sign of how individuals feel close to their partners and satisfied with their relationships. From this, the authors state that when people feel appreciated more, they tend to be more appreciative to their partners, and vice versa. This mutual appreciation encourages behaviors that make the relationship last, increasing conflict resolution skills and diminishing attitudes that can be destructive to the relationship. In summary, appreciation is conceived here as a critical barometer by which people measure the state of their relationship and

determine whether they should risk engaging in relationship-promoting behaviors (Gordon et al., 2012).

For Fagley (2016) appreciation is a construct of a higher order, defined as the act of recognizing the value and significance of something, feeling a positive emotional connection with it, whether it is an event, a person, a behavior or an object. Appreciation would therefore involve both cognition and affection. Consequently, the assessment would not be related to the benefits that others offer, that is, it does not depend on these benefits. It is the expression of genuine appreciation of them or their qualities, which forges emotional bonds and helps to maintain these bonds over time. It is not about appreciating a benefactor for a benefit provided, but it involves expressing appreciation for someone for the existing relationship, for what the person means and/or for their personal qualities and abilities (Fagley, 2016).

Also in the context of relationships, Lambert, Clark, Durtschi, Fincham, and Graham (2010) found that expressing appreciation to a romantic partner or a close friend is associated with greater interpersonal bonding. In this context, the appreciative functioning is influenced by schemas related to the communal relationship (Ramalho, Pinto, & Ribeiro, 2016; Simão & Seibt, 2014), as well as the level of commitment, attachment and satisfaction in the relationship (Gordon et al., 2012). A reciprocal relationship may also be a possibility, in which the schemas are influenced by the appreciative functioning (Rusk, Vella-Brodrick, & Waters, 2015).

Gordon et al. (2012) developed research on the impact of appreciation on intimate relationships, controlling for other variables such as commitment, attachment, and satisfaction with the relationship, from the perspective of risk regulation, which suggests that people think and behave in ways of promoting the relationship when they feel that the partner cares about them. Through three studies, the maintenance of the relationship was measured in a number of ways, including assessments of people's responsiveness to their partners'

needs, commitment to the relationship and relationship stability. The results showed that people who felt more appreciated reported being more appreciative and, in turn, exhibited more responsive behaviors and were seen as more committed to their romantic partners. They also found evidence that displays of relationship maintenance behavior are a critical way in which feelings of appreciation are passed from one partner to another. In other words, one of the ways in which appreciative people convey their feelings of appreciation to their partners is through behavioral demonstrations of responsiveness and commitment. In turn, when people see their partners as being more responsive and engaged, they feel more appreciated.

In a recent study, Rusk et al. (2015) sought to structure psychological and social processes and constructs that have relevance for appreciative functioning. The authors concluded that appreciative functioning is composed of a pattern of behaviors that involves the interaction of knowledge, comprehension, emotions, goals, cognition and relationships. Although the research on the subject is at a preliminary stage, there is evidence that indicates the benefits of appreciation (Adler & Fagley, 2005), which shows that it is a construct that deserves attention in the constant challenge of helping people to feel positive emotions, greater satisfaction and achievement (Fagley, 2012). Some studies (Algoe, Gable, & Maisel, 2010; Gordon et al., 2012) indicate that a high level of appreciation forges and maintains social connections, promotes good quality of sleep and encourages interpersonal trust and the ability to help.

The results of Adler and Fagley (2005) indicated that appreciation is related to satisfaction with life and positive affect even when optimism, emotional self-awareness, and spirituality were statistically controlled. Fagley and Adler (2012) presented applications for the work context, stating that appreciation is an important factor in the workplace, related to well-being and success. Pryce-Jones (2010) stated that when people are appreciated they feel and behave in a positive way, generating

short-term effects in the work environment, such as greater motivation and involvement in helping others, setting more challenging goals, affecting the time that they dedicate to the work and decreasing the likelihood of becoming sick. People also become more prone to repeating things that led the other to appreciate them. Therefore, the valorization of contributions by one of their peers or by the supervisor can be a powerful force, reinforcing the pleasure in the work, as well as the performance, increasing the capacity for collaboration in a team environment, and with that also being able to receive help in the work more regularly (Rusk et al., 2015).

Chow and Berenbaum (2016) examined the potential role of perceived utility of appreciation in depressive symptoms. Although all the participants presented lower levels of depressive symptoms at the end of the experiment, the greatest decrease occurred in the participants who were encouraged to perceive the utility of the experience of appreciation. Such findings suggest that teaching the value of positive emotions can be more effective than simply experiencing them.

Regarding measurement, there are few measures of appreciation, since the focus, in general, is on the gratitude construct, which encompasses appreciation, without considering its individuality (Langione, 2016). One example is the Gratitude, Resentment and Appreciation Test (GRAT-R), which was developed by Watkins, Woodward, Stone, and Kolts (2003). The instrument is composed of three factors: (1) *Appreciation for simple pleasures*; (2) *Social appreciation*; and (3) *Sense of abundance*. This instrument seeks to measure the trait of gratitude, with appreciation being a component of this trait.

The *Appreciation Inventory* (AI) is a specific measure of appreciation, developed by Adler and Fagley (2005). It is a 57-item instrument that assesses the frequency of events and attitudes related to appreciation. Its items cover the eight aspects of appreciation mentioned above, therefore, the scale factors are constituted by each of the eight aspects (focus, admiration, habits, present moment, self/

social comparison, gratitude, loss/adversity, and interpersonal appreciation). In its reduced version it has 23 items and six factors (having focus, ritual, expression, present moment, self/social comparison and loss/adversity).

In order to focus on appreciation, Tucker (2007) created the *General Appreciation Scale* (GAS). The final version was composed of five items and the respondents indicate at what level each item is true. Initially the scale contained 25 items and two factors, with a primordial factor and the other indirectly related to appreciation. The final version, however, was composed of the five items with the highest factor loading.

Another measure, the *Appreciation in Relationships* (AIR) Scale, (Gordon et al., 2012), was developed in the North American context, with samples of students and adults from the general population, to measure appreciation in amorous relationships, the object of the present study. The authors suggest that appreciation is important for maintaining relationships. The scale is composed of 16 items divided into two components: appreciative, which evaluates the extent to which people appreciate their partners, and appreciated, which assesses how much people feel appreciated by their partners. The measure includes two critical elements of appreciation, namely: being appreciative and feeling appreciated. It should be emphasized that no published studies were found that sought to psychometrically measure these measure in other contexts or cultures. The AIR was considered to be the only measure of appreciation in the context of amorous relationships. The others, elaborated until that point, measure the construct in a generalized way, approaching the various aspects of appreciation, whereas this is directed only toward the interpersonal aspect, being even more specific in the context of amorous relationships.

Considering the aforementioned arguments, the need for psychometrically adequate measures, coupled with the lack evidenced by Pires et al. (2015) of diversifying the range of measures in Positive Psychology in Brazil, this study aimed to adapt the AIR Scale to the Brazilian context, gathering evidence of validity and accuracy.

## **Method**

### ***Participants***

The non-probabilistic sample consisted of 233 people with a mean age of 30.9 years ( $SD = 9.23$ ; range = 18 to 62 years). Of this total, 52.4% were women, heterosexual (94.0%), Catholic (52.8%) and evangelical (24.0%). To participate in the study it was necessary to have been in an amorous relationship for at least 6 months, which could be dating, marriage or a stable union. Thus, the majority of the participants were married (56.7%) or dating (36.9%). The other 6.4% were in a stable union. The mean length of the relationship was 7.8 years ( $SD = 7.9$ ). The majority of the participants were from the states of Piauí (48.5%) or Rio de Janeiro (9.0%).

### ***Instruments***

**Appreciation in Relationships Scale** (AIR). The original version was developed by Gordon et al. (2012) based on the interpersonal appreciation subscale of the Appreciation Scale of Adler and Fagley (2005). The instrument is composed of 16 items, distributed in two components: *Appreciative* (nine items) and *Appreciated* (seven items) subscales. It incorporates both admiration for the partner (e.g., “I am sometimes struck with a sense of awe and wonder when I think about my partner being in my life”) and how the person feels appreciated in the relationship (e.g., “When I am with my partner, sometimes s/he will look at me excitedly and tell me how much s/he appreciates me”). The items are answered on a Likert type response scale, ranging from 1 (Strongly Disagree) to 7 (Strongly Agree).

**Sociodemographic Questionnaire.** This was composed of questions such as sex, age, family income, etc. It was intended to characterize the participants.

### ***Data Collection Procedures***

Initially, the AIR was submitted to the translation/back translation process by two bilingual psychologists. In this stage the measure was submitted to semantic validity, with 30

**Table 1**  
**Original and Translated Items**

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Appreciative Factor

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1. I tell my partner often that s/he is the best.  
*Eu digo ao(a) meu(minha) parceiro(a) frequentemente que ele(a) é o(a) melhor.*
2. I often tell my partner how much I appreciate her/him.  
*Eu falo frequentemente ao(a) meu(minha) parceiro(a) o quanto eu o(a) aprecio.*
3. At times I take my partner for granted.  
*Às vezes eu não valorizo meu(minha) parceiro(a) por achar que sempre o(a) terei em minha vida.*
4. I appreciate my partner.  
*Eu valorizo meu(minha) parceiro(a).*
5. Sometimes I don't really acknowledge or treat my partner like s/he is someone special.  
*Às vezes eu não reconheço ou trato o(a) meu(minha) parceiro(a) como alguém especial.*
6. I make sure my partner feels appreciated.  
*Eu me certifico que meu(minha) parceiro(a) se sente apreciado.*
7. My partner sometimes says that I fail to notice the nice things that s/he does for me.  
*Às vezes meu(minha) parceiro(a) fala que eu não percebo as coisas boas que ele(a) faz por mim.*
8. I acknowledge the things that my partner does for me, even the really small things.  
*Eu reconheço as coisas que meu(minha) parceiro(a) faz por mim, até mesmo as coisas realmente pequenas.*
9. I am sometimes struck with a sense of awe and wonder when I think about my partner being in my life.  
*Às vezes eu sou surpreendido(a) por uma sensação de deslumbramento e admiração quando eu penso sobre o meu(minha) parceiro(a) estar em minha vida.*

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Appreciated Factor

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1. My partner makes sure I feel appreciated.  
*Meu(minha) parceiro(a) se certifica que eu me sinto apreciado(a).*
  2. When I am with my partner, sometimes s/he will look at me excitedly and tell me how much s/he appreciates me.  
*Quando eu estou com meu(minha) parceiro(a), às vezes ele(a) olha para mim com entusiasmo e me diz o quanto me aprecia.*
  3. My partner often tells me the things that s/he really likes about me.  
*Frequentemente meu(minha) parceiro(a) me fala as coisas que ele(a) gosta em mim.*
  4. At times my partner takes me for granted.  
*Por achar que nunca vai me perder, às vezes meu(minha) parceiro(a) não me valoriza.*
  5. My partner often expresses her/his thanks when I do something nice, even if it's really small.  
*Meu(minha) parceiro(a) muitas vezes expressa sua gratidão quando faço algo legal, mesmo que seja realmente pequeno.*
  6. My partner doesn't notice when I do nice things for her/him.  
*Meu(minha) parceiro(a) não percebe quando eu faço coisas legais por ele(a).*
  7. My partner makes me feel special.  
*Meu(minha) parceiro(a) faz com que eu me sinta especial.*
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participants, to verify the comprehension of the instructions and items. No further adjustments were required. Table 1 shows the items and their respective translations.

The data collection was concurrently carried out in person ( $n=33$ ) and online ( $n=200$ ). For the application of the instruments, previously trained researchers, visited homes, chosen at random, or approached people in public places. At the time, they invited people to take part in the study. The online applications were made through the Google Docs platform, with the participants being contacted via email and social networks. In both data collection contexts, the instruments were only answered after the participants read and accepted the terms of consent, which had the same content, and which had to be signed in the face-to-face collection or accepted in the online version. The individuals accessed an electronic address that was available during the data collection period. Studies have shown evidence of adequate equivalence between data collected face-to-face, using the traditional pencil-paper method, and collected online (Brock, Barry, Lawrence, Dey, & Rolffs, 2012). On average, it took approximately 15 minutes to respond to the instruments.

### Data Analysis Procedure

Three programs were used to carry out the analyses presented here, these being R-3.3.3 (R Core Team, 2017), FACTOR (version 10.5) and Mplus (version 7.4; Muthén & Muthén, 1998-2017).

Using R, descriptive analyses were carried out, with the aim of describing and characterizing the participants. In addition, using the R packages, *Lavaan* (Rosseel, 2012) and *semTools* (semTools Contributors, 2016), it was possible to calculate the factorial invariance between the sex of the participants, adopting a robust estimator for ordinal measures (Weighted Least Squares Mean and Variance Adjusted [WLSMV]; Muthén & Muthén, 2014). Specifically, three models were used hierarchically (Cheung & Rensvold, 2002): (1) *configural*, in which it is verified whether the factorial model is the same for the groups; (2) *metric*, where the factor loadings ( $\lambda$ ) are

restricted in addition to the structure; and (3) *scalar*, which adds the equality of intercepts (*thresholds*). In order to verify invariance,  $\Delta\chi^2$  (*df*) and  $\Delta$ CFI were adopted, the first should not be statistically significant to be invariant, while the second should not be equal to or greater than 0.01 (Cheung & Rensvold, 2002; Damásio, 2013).

FACTOR 10.5 (Lorenzo-Seva & Ferrando, 2006) was used to decide how many factors could be retained, taking into account the polychoric correlation matrix of the AIR items. This software allows the implementation of the Hull method (Lorenzo-Seva, Timmerman, & Kiers, 2011) to assist in deciding the quantity of factors to be extracted. In addition, it was possible to calculate the Mean of Item Residual Absolute Loadings (MIREAL; Ferrando & Lorenzo-Seva, 2017) index to evaluate the unidimensionality of the items.

Using Mplus it was possible to implement Exploratory Structural Equation Modeling (ESEM), which consists of the combination of exploratory factor analysis (EFA) and structural equation modeling (Asparouhov & Muthén, 2009), making it possible to evaluate the adequacy of the factorial structure model. In addition, the adequacy of the original model of the two-factor scale was tested through Confirmatory Factor Analysis (CFA). For both, the Weighted Least Squares Mean and Variance - Adjusted (WLSMV) was used, and for the original model, Geomin rotation was employed, both suitable for simple factorial structures and with ordinal or categorical data without normal distribution (Asparouhov & Muthén, 2009; Muthén & Muthén, 2014). In order to evaluate the models, the guidelines provided by Hu and Bentler (1999) and the following indicators were taken into account: Comparative Index Fit (CFI; Bentler, 1990), Tucker-Lewis Index (TLI; Tucker & Lewis, 1973) and the Root Mean Square Error of Approximation (RMSEA; Steiger, 1990).

### Ethical Procedures

At the time of the face-to-face collection, the participants were informed about the general

purpose of the study, the voluntary nature of their participation and were guaranteed anonymity of the answers as well as the right to withdraw from the study at any time without any penalty. Before responding to the instruments, the participants received and signed two copies of the consent form. In the case of the online collection, the first page of the form contained information about the research objectives, as well as the confidential nature of the information and the right to stop responding to the study questions at any time without any penalty. When clicking on the “next” option the individual indicated agreement to participate in the study, this procedure corresponding to signing the consent form. In this way, the ethical precepts inherent in conducting research with human subjects were fulfilled, following the guidelines of resolution 466/12 and 510/16 of the National Health Council.

## Results

Initially, through FACTOR 10.5, the relevance of using exploratory factor analysis and dimensionality of the AIR were evaluated. The KMO = 0.88 and Bartlett's test = 2027.1 ( $df = 120$ ;  $p < .01$ ), attesting to the factoriality of the polychromatic correlation matrix. The Hull method (Lorenzo-Seva et al., 2011) indicated the extraction of a single factor (CFI = 0.97), and the MIREAL = 0.25 (Ferrando & Lorenzo-Seva, 2017) suggested treatment of items as essentially a single component. Therefore, the ESEM was performed, fixing the extraction of one factor (Model 1) as suggested by the Hull method, with the WLSMV extraction method. The result presented factor loadings ranging from 0.38 (Item 2: *Sometimes I don't really acknowledge or treat my partner like s/he is someone special*) to 0.88 (Item 15: *My partner makes me feel special*), however, the indicators of fit were below those recommended [CFI = 0.88; TLI = 0.86 and RMSEA = 0.161 (90%CI = 0.152 - 0.174)]. In this way, it was decided to test the fit of the original two-factor model (Adler & Fagley, 2005; Model 2) through Confirmatory Factor Analysis (CFA), using the same method

of Geomin extraction and rotation. The CFA score indicated adequate fit [CFI = 0.97; TLI = 0.96 and RMSEA = 0.063 (90%CI = 0.050-0.077)]. The results of the ESEM and CFA are presented in Table 2 below.

As shown, the original model was more adequate, presenting satisfactory fit indices. Furthermore, it can be seen that, regardless of the method used (ESEM or CFA), the factors generated had accuracy indicators above the recommended ( $> 0.70$ ). After this stage, it was verified whether the structure that best fit the data (Model 2) was invariant to the sex of the participants, allowing the verification of whether the configuration and parameters of the AIR are equivalent for men and women (Damásio, 2013). Therefore, an invariance analysis for ordinal or categorical data was chosen, taking into account the nature of the measure used here. The results are presented in Table 3.

In Table 3 it can be seen that, through testing the configuration equivalence and parameter constraints for the groups considered (men and women), the AIR can be considered invariant for both men and women [ $\Delta CFI < 0.01$  and  $\Delta \chi^2 (df)$  with  $p > .05$ ]. In the same way, in order to verify the equivalence of the model for participants from the online and face-to-face data collection, the factorial invariance regarding the type of collection was tested, with the invariant structure verified for the two groups [ $\Delta CFI < 0.01$  and  $\Delta \chi^2 (df)$  with  $p > .05$ ].

## Discussion

The main aim of this study was to gather evidence related to the factorial structure and internal consistency of the Appreciation in Relationships (AIR) scale. It can be considered that this objective was achieved and that the psychometric parameters of this measure will allow its use in the Brazilian context, in future studies on the subject. It was sought to adopt the route taken by Gordon et al. (2012) with respect to the analyses of the psychometric parameters used, however, differing from the aforementioned study, which used different techniques, appropriate to the ordinal nature of



**Table 2**  
Factorial Structure of the AIR according to ESEM (Model 1) and CFA (Model 2)

Summary Items	Model 1 - ESEM	Model 2 - CFA	
	Appreciation	Appreciative	Appreciated
16. Às vezes eu sou surpreendido(a) por uma sensação de deslumbramento e admiração quando eu penso sobre o meu(minha) parceiro(a) estar em minha vida.	0.770	0.757	—
14. Eu valorizo meu(minha) parceiro(a).	0.796	0.759	—
12. Eu me certifico que meu(minha) parceiro(a) se sente apreciado.	0.740	0.749	—
07. Eu digo ao(a) meu(minha) parceiro(a) frequentemente que ele(a) é o(a) melhor.	0.691	0.644	—
05. Às vezes eu não valorizo meu(minha) parceiro(a) por achar que sempre o(a) terei em minha vida.	0.438	0.345	—
04. Eu reconheço as coisas que meu(minha) parceiro(a) faz por mim, até mesmo as coisas realmente pequenas.	0.696	0.703	—
03. Às vezes meu(minha) parceiro(a) fala que eu não percebo as coisas boas que ele(a) faz por mim.	0.443	0.374	—
02. Às vezes eu não reconheço ou trato o(a) meu(minha) parceiro(a) como alguém especial.	0.380	0.352	—
01. Eu falo frequentemente ao(a) meu(minha) parceiro(a) o quanto eu o(a) aprecio.	0.738	0.715	—
15. Meu(minha)a parceiro(a) faz com que eu me sinta especial.	0.878	—	0.891
06. Meu(minha) parceiro(a) se certifica que eu me sinto apreciado(a).	0.772	—	0.791
09. Frequentemente meu(minha) parceiro(a) me fala as coisas que ele(a) gosta em mim.	0.811	—	0.759
08. Quando eu estou com meu(minha) parceiro(a), às vezes ele(a) olha para mim com entusiasmo e me diz o quanto me aprecia.	0.808	—	0.756
11. Meu(minha) parceiro(a) muitas vezes expressa sua gratidão quando faço algo legal, mesmo que seja realmente pequeno.	0.755	—	0.727
13. Meu(minha) parceiro(a) não percebe quando eu faço coisas legais por ele(a).	0.672	—	0.616
10. Por achar que nunca vai me perder, às vezes meu(minha) parceiro(a) não me valoriza.	0.652	—	0.579
Number of Items	16	9	7
Cronbach's alpha* ( $\alpha$ )	0.93	0.82	0.89
McDonald's Omega ( $\omega$ )	0.92	0.81	0.89

Note. \* Cronbach's alpha with polychromatic correlations.

**Table 3**  
**Factorial Invariance of the AIR for Sex and Type of Data Collection (Model 2)**

Restrictions	INVARIANCE					Decision	
	$\chi^2(df)$	CFI	RMSEA	$\Delta \chi^2(df)^*$	$\Delta$ CFI		
Sex	Configural	655.28 (206)	0.781	0.137	—	—	Accept
	Metric	676.00 (220)	0.778	0.134	20.72 (14)	0.003	Accept
	Scalar	687.17 (234)	0.779	0.129	11.17 (14)	0.001	Accept
Collection	Configural	678.49 (206)	0.774	0.141	—	—	Accept
	Metric	700.12 (220)	0.768	0.138	21.63 (14)	0.007	Accept
	Scalar	718.39 (234)	0.766	0.134	18.27 (14)	0.002	Accept

\* $p \leq .05$ .

the measure employed (Asparouhov & Muthén, 2009; Muthén & Muthén, 2014). In order to evaluate the AIR factor structure, ESEM was used (Muthén & Muthén, 2014), which has the advantage of combining the results of the EFA and CFA methods in the evaluation of psychological instruments (Marsh, Morin, Parker, & Kaur, 2014), being considered a semiconfirmatory alternative that is currently recommended (Lloret-Segura, Ferreres-Traver, Hernández-Baeza, & Tomás-Marco, 2014). From the use of this technique it was possible to observe that the two-dimensional structure of the measure, which corresponds to the original model (Gordon et al., 2012), was the one found to be the most adequate, with the factors receiving the same nomenclature (i.e. *Appreciated* and *Appreciative*, and including the same items as the study by Gordon et al., 2012).

Regarding the accuracy of the measure, evaluated through the internal consistency, the values observed in this study were close to those reported by the authors of the scale (Gordon et al., 2012). In addition, the internal consistency was also assessed, through McDonald's omega, an alternative that seeks to address deficiencies

involving Cronbach's alpha considering the internal consistency of psychometric instruments (Dunn, Baguley, & Brunson, 2013). It should be noted that, as in the AIR development study, the accuracy indicators remained above 0.70, the level recommended in the literature (Nunnally & Bernstein, 1994; Pasquali, 2003).

In relation to the factorial invariance of the AIR, it is assumed that the findings with the measure in question are pioneering. The results indicated that the assessment of appreciation between partners in an amorous relationship, through the AIR, can be performed with both male and female participants (Byrne, Shavelson, & Múthen, 1989), as well as through either type of collection (face-to-face and online) reinforcing previous evidence (Brock et al., 2012). Thus, the psychometric adequacy of the measure was considered through hierarchical constraints (Damásio, 2013) that ensured the equivalence of the structure (*configural invariance*, the same factorial structure for all groups), of factor loadings (*metric invariance*, equivalent saturations of items in the different factors for the groups analyzed) and intercepts (*scalar invariance*, similar thresholds).

Some scholars suggest that gratitude is vital for the maintenance of interpersonal bonds, such as amorous relationships (Algoe et al., 2010; Gordon, Arnette, & Smith, 2011). In this study the focus was on the appreciation construct, which is considered another side of the experience of gratitude (Gordon et al., 2012). In other words, in this context of relationships, gratitude and appreciation could be understood as synonyms, however, appreciation is not triggered by a specific benefit, but by recognition of the value of the partner for being who s/he is (Adler & Fagley, 2005).

The model proposed by Gordon et al. (2012) was theoretically based on the model of risk regulation, which has as its basic principle the idea that feeling positively considered by a partner provides people with a sense of security needed to engage in relationships (Murray, Holmes, & Collins, 2006). Following this logic, they proposed that people, when they feel appreciated by their amorous partners, tend to adopt relationship-maintaining behaviors, leading the other partner to feel appreciated. Being appreciative and the feeling of being appreciated promote the maintenance of the relationship (Gordon et al., 2012).

In view of the above, the importance of having measures that evaluate appreciation is highlighted. Accordingly, the Appreciation in Relationships Scale (AIR) stands out, since it evaluates both how much people feel appreciated by their partners and how much they appreciate them. It is also considered that this study extends the comprehension of the role of gratitude in maintaining the quality of romantic relationships by considering appreciation as an important aspect of the gratitude experience (Gordon et al., 2011). It is possible to observe that not only do feelings of appreciation promote behaviors of relationship maintenance, but that relationship maintenance behaviors also make partners feel appreciated. Therefore, it is believed that the adaptation of the AIR to the Brazilian context may facilitate the comprehension of the aspects that contribute to the maintenance of relationships and the comprehension of what causes couples

to be more committed and responsive in the relationship (Impett et al., 2010).

Finally, like the other scientific undertakings, it is worth mentioning the potential limitation of the type of sample used (non-probabilistic), which restricts the possibility of generalization of the results presented here (Hair, Black, Babin, & Anderson, 2010). Despite the possible limitations, with a measure such as the AIR, with acceptable parameters, it will be possible to investigate the effect of appreciation in diverse amorous relationships, such as abusive ones, with this still being a protective factor for crises faced by couples.

### ***Authors' Contributions***

Substantial contribution in the concept and design of the study: Sandra Elisa de Assis Freire

Contribution to data collection: Ariane Viana Martins Portela; Rislay Carolinne Silva Brito.

Contribution to data analysis and interpretation: Emerson Diógenes de Medeiros.

Contribution to manuscript preparation: Ariane Viana Martins Portela; Rislay Carolinne Silva Brito.

Contribution to critical revision, adding intellectual content: Sandra Elisa de Assis Freire; Emerson Diógenes de Medeiros.

### ***Conflicts of interest***

The authors declare that they have no conflict of interest related to the publication of this manuscript.

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