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A Translation and Validation of the Dispositional Greed Scale in Spanish

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Abstract: Greed is best defined as the "experience of desiring to acquire more and the dissatisfaction of never having enough" (Seuntjens, Zeelenberg, Breugelmans, & Van De Ven, 2015, p. 518). The Dispositional Greed Scale (Seuntjens, Zeelenberg, Van De Ven, & Breugelmans, 2015) is most often used to measure greed and has been validated for various languages, although not for Spanish. We present the first Spanish translation of the DGS. We tested two parallel translations of the scale (N = 305) using two related but distinct words for greedy: *codicioso* and *avaricioso*. Both translations showed unidimensional factor structure, with acceptable reliability. Multigroup confirmatory factor analysis showed evidence for scalar equivalence of both translations. A comparison with data from a previous English version of the scale showed evidence of metric equivalence. Additionally, we found the expected relationships between greed and envy, materialism, need for achievement, and self-improvement. We conclude the DGS-Spanish has been successful in capturing the essential features of the DGS.

Keywords: Dispositional Greed Scale, Spanish, validation, social values

Greed is best defined as the "experience of desiring to acquire more and the dissatisfaction of never having enough" (Seuntjens, Zeelenberg, Breugelmans, & Van De Ven, 2015; p. 518), often summarized as the insatiable desire for more. Greed not only applies to money, products, and goods but also to nontangible outcomes, such as power, status, influence, and sex. Greed is an important motive for social and economic behavior. Perspectives on greed vary, sometimes being considered to be one of the most important driving forces of progress, and at other times to be a sin that is responsible for great evil (Zeelenberg & Breugelmans, 2022). At both the individual and societal levels, greed has been related to both positive and negative outcomes. For instance, at the individual level, greed has been proposed as an important motivator for people to attain their goals (Hume, 1739/2001), being related to working in sectors such as banking and finance (Van Muijen & Melse, 2015), and higher (family) income (Hoyer et al., 2022). However, it has also been associated with harm to personal fulfillment and satisfaction, such as ignoring norms and values (Levine, 2005), overearning (Zeelenberg et al., 2020), theft (Caudill, 1988), fraud (R. G. Smith, 2003), corruption, and other unethical behaviors (Rose-Ackerman, 1999; Seuntjens et al., 2019) and to having fewer long-lasting relationships and fewer children (Hoyer et al., 2022). At the societal level, greed has been argued to be a cause of economic growth and development, employment, innovation, and well-being (Greenfeld, 2003; Melleuish, 2009; Oka, & Kuijt, 2014), but also of financial crises (Reinhart & Rogoff, 2009).

Various scales have been developed to measure dispositional greed. Empirical comparisons of these scales reveal that all scales are reliable, correlate highly, and essentially assess the same trait (see Mussel et al. 2018; Zeelenberg et al., 2022). Of these scales, we selected to translate and validate the Dispositional Greed Scale (DGS; Seuntjens, Zeelenberg, Van De Ven, & Breugelmans, 2015) because it is the most often used

and most often cited scale. A comparison of the psychometric properties of the different greed scales found that the DGS had a clear single-factor structure (Zeelenberg et al., 2022). Moreover, the DGS has been validated for at least seven languages (i.e., Belarussian, Dutch, English, Japanese, Mandarin, Portuguese, and Russian; see Zeelenberg & Breugelmans, 2022). However, none has been validated for use in Spanish-speaking communities. Therefore, we believe that the DGS is a prime candidate for an adaptation for use in Spanish-speaking communities.

A validated DGS-Spanish holds great promise for both extensions of existing research and the development of original research. Globally, the Spanish language area covers a substantial proportion of the world's countries and populations, and it is the world's second-most spoken native language and the world's fourth-most spoken language overall (Instituto Cervantes, 2021). More importantly, these countries differ substantially in cultural, socioeconomic, and demographic characteristics, providing ample opportunities to test ideas about both the societal origins and consequences of greed. The development of well-validated greed scales has contributed to a blooming body of research in various countries, and it can be expected that the availability of a DGS-Spanish will further our understanding of this important motive.

The Dispositional Greed Scale (DGS)

The 7-item DGS proposed by Seuntjens, Zeelenberg, Van De Ven, & Breugelmans (2015) contains short statements on facets of greed based on a prototype analysis of how people define greed (Seuntjens, Zeelenberg, Breugelmans, & Van De Ven, 2015). Respondents indicate to what extent the statements are descriptive of themselves (1 = *completely disagree* to 5 = *completely agree*). The scale is unidimensional, with excellent reliabilities, construct and discriminant validity, and temporal stability (see, for example, Seuntjens, Zeelenberg, Van De Ven, & Breugelmans, 2015; Zeelenberg et al., 2020, 2022). The DGS has been applied with a wide range of groups, such as adolescents, university students, people living in low SES circumstances, and representative samples of the general (working) population (e.g., Freires et al., 2019; Liu et al., 2019; Masui et al., 2018; Poluektova et al., 2022; Seuntjens, Zeelenberg, Van de Ven & Breugelmans, 2015; Van Muijen & Melse, 2015; Zeelenberg et al., 2020, 2022). Hence, we expect the DGS-Spanish to show a unidimensional structure with good item-total correlations and reliability.

We expect the DGS-Spanish to correlate positively with measures of materialism and envy and negatively with life

satisfaction, replicating other studies. Materialism refers to the importance that individuals attach to worldly possessions (Belk, 1984). Greed applies to both material possessions and nonmaterial objects, such as power, status, and sexual partners (Seuntjens, Zeelenberg, Breugelmans, & Van De Ven, 2015), making greed the broader construct. Therefore, we expect the DGS-Spanish to be positively correlated with materialism (cf. Liu et al., 2019; Masui et al., 2018; Seuntjens, Zeelenberg, Van De Ven, & Breugelmans, 2015, 2016).

Envy is felt when "we observe another person who has something that we want, but lack" (Elster, 1993, p. 49) and related to being dissatisfied with the current situation and wanting more (Van de Ven et al., 2009), thus conceptually linked to greed. Also empirically, greed relates to the Dispositional Envy Scale (R. H. Smith et al., 1999) and the Vices and Virtues Scale (Brud et al., 2020; Veselka et al., 2014). We expected the DGS-Spanish to also be associated with benign and malicious envy (cf. Crusius et al., 2021).

Finally, greedy people are not satisfied with their current situation and desire more in hope of becoming happy (Seuntjens, Zeelenberg, Breugelmans, & Van De Ven, 2015). This is reflected in their overall well-being and satisfaction with life, as found in prior research (e.g., Hoyer et al., 2022; Krekels & Pandelaere, 2015; Seuntjens, Zeelenberg, Van De Ven, & Breugelmans, 2015; Zeelenberg et al., 2020). Therefore, we expect to find a negative correlation between life satisfaction and the DGS-Spanish.

We additionally examined the relationship of the DGS-Spanish and values (cf. Zeelenberg & Breugelmans, 2022). Schwartz's (1992) values form a continuum of related motivations with self-transcendence values on one end and self-enhancement values on the other. Self-transcendence values (Universalism and Benevolence) emphasize a motivation to preserve and enhance the welfare of others, and self-enhancement values (Achievement and Power) highlight the importance a person gives to power and achievement, as well as hedonism, and emphasizes pursuit of one's own interests and relative success and dominance over others. On the basis of the results by Poluektova et al. (2022), who included Russian adaptations of the DGS and of Schwartz's values in a study on poverty, we could expect dispositional greed to be positively related to self-enhancement and negatively to self-transcendence.

Overview of the Present Research

We aimed to develop a validated Spanish translation of the DGS (DGS-Spanish). A Spanish scale would allow for meaningful comparisons in cross-cultural research and also

to provide a better picture about how greed influences behavior in the Spanish-speaking cultural contexts. We report on the development of the DGS-Spanish, addressing issues with translation, psychometric properties, and validity.

Method

Translation

We used a committee approach to translate the DGS from English to Spanish (Van de Vijver & Leung, 2021). Two experts, with knowledge of scale construction, English, and Spanish (native speakers), independently translated the items and subsequently discussed emerging differences between the two versions. Most differences could be resolved through consensus. In a next step, the discussion and emerging differences were discussed by the authors, who have knowledge of the construct of greed, the DGS, and both English and Spanish. All issues could be accommodated except for the translation of Item 2 (in English: "Actually, I'm kind of greedy"). More specifically, "greedy" could be translated in "codicioso" and "avaricioso" that have with minor differences in connotation.

In Spanish, both words are often used interchangeably. However, there are subtle differences. According to the Dictionary of the Spanish Language (RAE), *avaricia* is the desire to possess and acquire richness to treasure while *codicia* is defined as an excessive lust for richness. Thus, the difference is in the tag "to treasure." A person who wants to possess a lot of things is *codicioso*, but if this excessive desire is accompanied by no desire to spend or use it, then it can be called *avaricioso*. The term codicia is more generic than avaricia. Every avaro is codicioso, but not every codicioso is avaro. A study (García Hoz, 1953) aimed at determining the minimum vocabulary to express oneself in Spanish. The author used a half a million words from four written media: personal letters, public documents, newspapers, and books. A*varo* and *avaricia* were used 4 times, and *codicia* and *codiciar* 3 times. Furthermore, when we consulted Google Trends, a platform that provides insights into the frequency with which people search for specific words on the internet, we discovered that both *codicioso* and *avaricioso* exhibited a strikingly similar search pattern. This finding suggests that both terms garnered almost equal attention and interest from online users. In sum, both words are used with similar frequency in Spanish.

Because no convincing arguments could be formulated to choose one over the other, we decided to make it an empirical question and compare two versions of the scale, including either word. We named these scales Greed *Codicioso* and Greed *Avaricioso*. The final items of the DGS-Spanish can be found in Table 1.

Participants and Procedure

Participants were 305 college students (140 women; M_{age} = 19.87, SD = 2.15) from a Colombian Business School. We based the sample size on those of related papers presenting a translation and validation of the Dispositional Greed Scale languages (Japanese: Masui et al., 2018, N = 856; Mandarin Chinese: Liu et al., 2019; Sample A, N = 133, Sample B, N = 303; Brazilian Portuguese: Freires et al., 2019, N = 338; Russian: Poluektova et al., 2022, N = 350). The sample size is well above 250 that Schönbrodt and Perugini (2013) give as a benchmark for achieving stable correlations. Additionally, a sensitivity analysis using G*Power (Faul et al., 2009) showed that a Pearson's correlation coefficient with 300 participants would be sensitive to effects of r = .18 or r = −.18 with 80% power (α = .05, one-tailed). Previous studies found correlations between greed and related constructs, such as envy and materialism, ranging from .30 to .72 and correlations between greed and life satisfaction ranging from −.13 to −.19. Therefore, our sample size was sufficient to detect most of the effects.

Participants responded to a 10-min online survey via Qualtrics. Participants were first randomly assigned to complete one of the two versions of the DGS-Spanish (i.e., Greed *Codicioso*, N = 149 or Greed *Avaricioso*, N = 156), and next, they filled in the other measures in an individually random order (all in Spanish). Participation was voluntary, and there was no monetary payment. Only participants who finished the questionnaire were included.

Measures

Dispositional Greed

Two versions of the DGS-Spanish were tested (see Table 1 for the items). For participants in the Greed Codicioso [Avaricioso] condition, Item 2 read: "A decir verdad, soy un poco codicioso [avaricioso]." Items were rated from 1 = *strongly disagree* to 5 = *strongly agree*.

Dispositional Benign and Malicious Envy

We used the Benign and Malicious Envy Scale (BeMaS: Lange & Crusius, 2015; Spanish version: Navarro-Carrillo et al., 2017) to assess individual differences in benign (5 items) and malicious envy (5 items). An example item for benign envy is "Envying others motivates me to accomplish my goals," and one for malicious envy is "Seeing other people's achievements makes me resent them." Items were rated from 1 = *strongly disagree* to 6 = *strongly agree*.

Table 1. Mean scores, standard deviation, and factor loadings (standardized) of the items of the DGS-Spanish (Greed *Codicioso* and Greed *Avaricioso*)

Items	Greed *Codicioso*			Greed *Avaricioso*		
	M	SD	Factor loading [95% CI]	M	SD	Factor loading [95% CI]
1. Siempre quiero más	3.51	0.92	.67	3.55	1.01	.73
(I always want more)			[.54, .81]			[.62, .84]
2A. A decir verdad, soy un poco codicioso	3.04	1.02	.60			
(Actually, I'm kind of greedy)			[.45, .74]			
2B. A decir verdad, soy un poco avaricioso				3.03	1.08	.55
(Actually, I'm kind of greedy)						[.42, .68]
3. Nunca se tiene demasiada plata	3.20	1.11	.21	3.16	1.16	.48
(One can never have too much money)			[.03, .40]			[.33, .62]
4. Apenas consigo algo, empiezo a pensar en lo próximo que quiero	3.48	1.07	.59	3.47	1.11	.64
(As soon as I have acquired something, I start to think about the next thing I want)			[.45, .73]			[.52, 0.76]
5. Sin importar lo que tengo, nunca estoy del todo satisfecho	2.72	1.03	.45	2.88	1.13	.64
(It doesn't matter how much I have, I'm never completely satisfied)			[.30, .61]			[.52, .76]
6. Mi consigna es que "entre más, mejor"	2.93	0.93	.58	2.92	1.11	.54
(My life motto is "more is better")			[.44, .72]			[.40, .67]
7. No se me ocurre pensar que uno pueda tener demasiadas cosas	2.40	1.05	.18	2.47	1.09	.25
(I can't imagine having too many things)			[−.01, 0.37]			[.08, .42]
Mean score DGS-Spanish	3.04	0.58		3.07	0.69	
Skewness		.62			.17	
Kurtosis		3.42			2.76	
Cronbach's α		.65			.75	
N		149			156	

Note. Standardized factor loadings come from a CFA model.

Materialism

The 9-item Material Values Scale (Richins, 2004; Spanish version: Lado & Villanueva, 1998) assesses beliefs about the importance to own material things. An example item is "I admire people who own expensive homes, cars, and clothes." Items were rated from 1 = *strongly disagree* to 5 = *strongly agree*.

Satisfaction With Life

Participants completed the 5-item Satisfaction With Life Scale (Diener et al., 1985; Spanish version: Vázquez et al., 2013). An example item is "In most ways my life is close to my ideal." Items were rated from 1 = *strongly disagree* to 5 = *strongly agree*.

Self-Transcendence and Self-Enhancement Values

Values were measured by the relevant subscales of Schwartz (1992) Value Survey (Spanish version: Schwartz, 2021). The 15-item self-transcendence values subscale includes measures of Universalism Nature, Universalism

Concern, Universalism Tolerance, Benevolence Care, and Benevolence Dependability. The 9-item self-enhancement subscale included measures of Achievement, Power Dominance, and Power Resources. For all items, participants rated their similarity to a hypothetical person in terms of their goals and aspirations (from 1 = *not like me at all* to 6 = *very much like me*).

Data Analysis

CFA was used to validate the one-factor model of Seuntjens, Zeelenberg, Van De Ven, and Breugelmans (2015). Hereto, we used the *lavaan*, *semPlot*, and *semTools* packages in R (Hirschfeld & von Brachel, 2014; Rosseel, 2012). The overall model fits were evaluated by different indices, such as the root-mean-square error of approximation index (RMSEA < .08, 90% CI), chi-square (χ^2 and p), the comparative fit index (CFI > .95), the Tucker–Lewis index (TLI > .95), and the standardized

root-mean-square residual (SRMR <.08), as suggested in the literature (Acock, 2013; Bentler, 1990; Hu & Bentler, 1999; Steiger & Lind, 1980; Tucker & Lewis, 1973).

For testing measurement invariance between Greed *Codicioso* and Greed *Avaricioso*, and between DGS-Spanish and the original DGS (Seuntjens, Zeelenberg, Van De Ven, & Breugelmans, 2015), we used multigroup CFA (MGCFA), the most widely used method for this (cf. Boer et al., 2018; Vandenberg & Lance, 2000). We imposed a series of equality constraints among the parameters that define their measurement models following standard procedures (Meredith, 1993). First, configural invariance was assessed by imposing the equivalent form on all the relationships but does not impose any equality constraints. That is, both groups have the same indicator loadings on the latent variable but corresponding loadings do not need to be equal, suggesting that both scales tapped into a similar latent construct in both languages. Next, we tested metric invariance whether the loadings were equal for both groups. If so, the items have the same meaning for both groups in relation to the latent variable. Finally, we tested for scalar invariance whether the items in both groups have different means that could reflect differences between the groups. We assessed measurement invariance using both the likelihood-ratio test (LRT) and changes in goodness-of-fit indices. The LRT is a χ^2 difference test in which the goodness of fit of a more restricted and less restricted model is compared. Nonsignificant differences indicate that measurement invariance is tenable. Similarly, we compared the difference in CFI (ΔCFI), RMSEA (ΔRMSEA), and SRMR (ΔSRMR) between the more and less restricted models. Differences smaller than .01 indicate invariance (Cheung & Rensvold, 2002).

Results

Descriptive Statistics

Table 1 displays the descriptive statistics of the two versions of the DGS-Spanish. In addition, Figure 1 displays the distribution of the scores of the scales (Greed *Codicioso* and Greed *Avaricioso*, respectively). Both skewness and kurtosis indicators are closer to zero in Greed *Avaricioso* than Greed *Codicioso*, indicating a more normal distribution of the scores for this version. In addition, the reliability coefficients were higher for Greed *Avaricioso* (α = .75) than for Greed *Codicioso* (α = .65). Other descriptive statistics are very similar for both versions.

Confirmatory Factor Analysis (CFA)

We first conducted separate CFAs comparing fit indices for both versions. Subsequently, we tested for configural, metric, and scalar invariance. We report these below.

Comparing CFA for Both Versions

Separate CFAs were done for both versions. As shown in Table 2, the fit indices for Greed *Codicioso* [χ^2(14) = 17.54, p = .23, CFI = .972, RMSEA = .041, SRMR = .055] and Greed *Avaricioso* [χ^2(14) = 20.99, p = .10, CFI = .965, RMSEA = .057, SRMR = .054] revealed a good model fit for both versions of the DGS-Spanish. Next, we compared item loadings (see Table 1). In Greed *Codicioso*, five of the seven items have loadings higher than the recommended cutoff of .40 (Hinkin, 1995, 1998). In Greed *Avaricioso*, six of the seven items have loadings higher than .40. However, others have proposed other cutoff values, such as .30 (Costello & Osborne, 2005) or .45 (Tabachnick & Fidell, 2007).
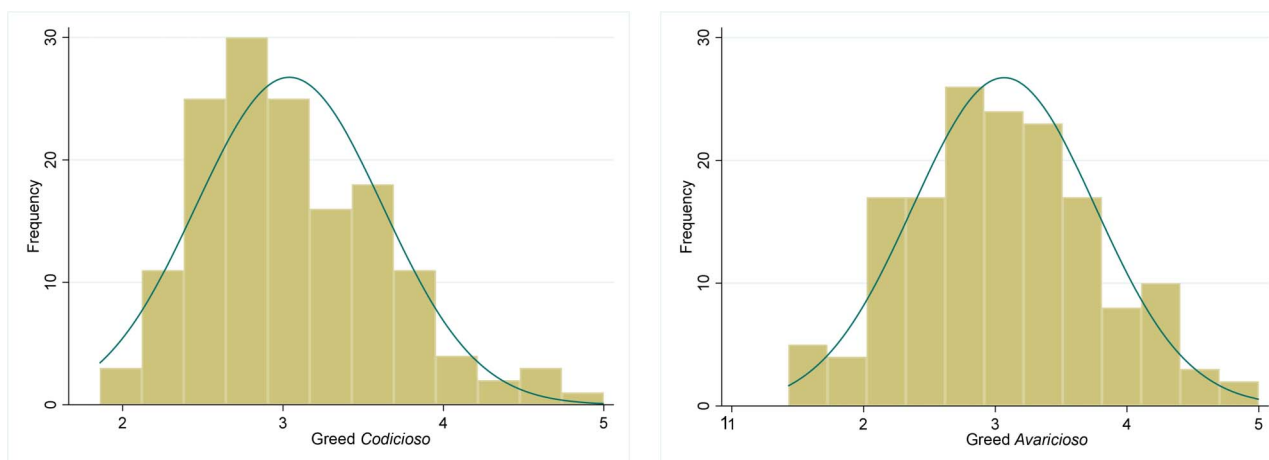

Figure 1. Histograms of the scores on the Spanish-DGS for Version Greed *Codicioso* and Greed *Avaricioso*.

Table 2. Fit indices for CFA models of the DGS-Spanish

Model	χ^2	df	p	CFI	TLI	RMSEA [90% CI]	SRMR
Greed *Codicioso* (N = 149)	17.54	14	.23	.972	.958	.041 [0, .094]	.055
Greed *Avaricioso* (N = 156)	20.99	14	.10	.965	.947	.057 [0, .104]	.054
DGS-Spanish (N = 305)	29.61	14	.009	.953	.929	.061 [.029, .091]	.050
DGS-Spanish short (N = 305)	26.08	9	.002	.932	.886	.079 [.045, .115]	.055

Table 3. Model comparison for Greed *Codicioso* and Greed *Avaricioso* invariance

Model	Compare to model	χ^2	df	p	$\Delta\chi^2$	Δdf	$\Delta\chi^2$ sig.	CFI	ΔCFI	RMSEA [90% CI]	ΔRMSEA	SRMR	ΔSRMSEA
1. Configural invariance		38.54	28	.09				.968		.050 [0, .085]		.049	
2. Metric invariance	1	44.25	34	.11	5.72	6	.46	.968	<.001	.044 [0, .078]	−.006	.059	.01
3. Scalar invariance	2	47.09	40	.21	2.84	6	.83	.978	.01	.034 [0, .068]	−.01	.061	.002

Measurement Invariance

To assess measurement invariance, we performed additional nonpreregistered analyses. Configural invariance was tested by fitting the CFA model simultaneously in both groups (Greed *Codicioso* and Greed *Avaricioso*), this specification imposes the equivalent form on all the relationships but does not impose any equality constraints (for fit indices and model comparisons, see Table 3). The results of the CFA model showed that this model fits adequately to the data across Greed *Codicioso* and Greed *Avaricioso* [χ^2(28) = 38.54, p = .09, CFI = .968, RMSEA = .05, SRMR = .049], which supports configural invariance. Next, when assessing metric invariance, the factor loadings were constrained to be equal across groups (Greed *Codicioso* and Greed *Avaricioso*). The constrained model fit was not significantly different from that of the configural model [$\Delta\chi^2$(6) = 5.72, p = .46; ΔCFI < .001, ΔRMSEA = −.006, ΔSRMSEA = .01], and the fit was acceptable [χ^2(34) = 44.25, p = .11, CFI = .968, RMSEA = .044, SRMR = .059]. Hence, we preferred this model and concluded that there are no statistically significant differences between Greed *Codicioso* and Greed *Avaricioso* in the meaning of the greed indicators/items, given the power of our study to detect these.

Finally, we assessed scalar invariance by testing whether the items in both groups (Greed *Codicioso* and Greed *Avaricioso*) have different means that could reflect differences in the groups. The constrained model fit was not significantly different from that of the metric model [$\Delta\chi^2$(6) = 2.84, p = .83; ΔCFI = .01; ΔRMSEA = −.01, ΔSRMSEA = .002], and the fit of the model was acceptable [χ^2(40) = 47.09, p = .21, CFI = .978, RMSEA = .034, SRMR = .061]. Hence, we concluded that the two versions of the DGS-Spanish (Greed *Codicioso* and Greed *Avaricioso*) did not differ in loadings or intercepts, providing evidence that both versions performed equally well. Together, these findings clearly indicate that the different versions of the scale do not exhibit significant differences in their psychometric properties. In consequence, for the next analyses, we pulled together the data from both versions.

Description of the Total Sample

Table 4 presents the results for the final version of the DGS-Spanish. All items loaded significantly and strongly on a single dimension, and the fit of the model was satisfactory (see Table 2: χ^2[14] = 29.61, p = .009, CFI = .953, RMSEA = .061, SRMR = .05). The standardized loadings ranged from .21 to .70, with five of seven above the recommended .4. Additionally, the Cronbach's α was acceptable (α = .71). As a robustness check, we estimated a CFA that did not include Item 2. The fit of that model was not satisfactory (see Table 2: χ^2[9] = 26.08, p = .002, CFI = .932, RMSEA = .079, SRMR = .055), and reliability was lower (α = .66). Therefore, subsequent analyses involve the full, combined scale.

Comparing DGS-Spanish and DGS-English

For external validation of the DGS-Spanish, we compared it with data gathered with the English DGS (Study 2 of Zeelenberg et al., 2022).[1] In this study, 1000 US-based participants at Academic Prolific responded to four different

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1 Note that these analyses were not preregistered because they were performed after feedback from anonymous reviewers, whom we would like to thank for this suggestion.

Table 4. Mean scores, SD, and factor loadings (standardized) of the items of the DGS-Spanish full sample

	DGS-Spanish			DGS-Spanish short		
Items	M	SD	Factor loading [95% CI]	M	SD	Factor loading [95% CI]
1. Siempre quiero más	3.52	0.96	.70	3.52	0.96	.73
(I always want more)			[.62, .78]			[.62, .84]
2. A decir verdad, soy un poco codicioso/avaricioso	3.03*	1.05	.57			
(Actually, I'm kind of greedy)			[.47, .67]			
3. Nunca se tiene demasiada plata	3.18	1.13	.36	3.18	1.13	.48
(One can never have too much money)			[.24, .47]			[.33, .62]
4. Apenas consigo algo, empiezo a pensar en lo próximo que quiero	3.48	1.09	.62	3.48	1.09	.64
(As soon as I have acquired something, I start to think about the next thing I want)			[.53, .71]			[.52, .76]
5. Sin importar lo que tengo, nunca estoy del todo satisfecho	2.80	1.09	.56	2.80	1.09	.64
(It doesn't matter how much I have, I'm never completely satisfied)			[.46, .66]			[.52, .76]
6. Mi consigna es que "entre más, mejor"	2.92	1.02	.56	2.92	1.02	.54
(My life motto is "more is better")			[.46, .66]			[.40, .67]
7. No se me ocurre pensar que uno pueda tener demasiadas cosas	2.44	1.07	.21	2.44	1.07	.25
(I can't imagine having too many things)			[.09, .34]			[.08, .42]
Mean score DGS-Spanish	3.05	0.64		3.06	0.65	
Cronbach's α		.71			.66	
N		305			305	

Note. Standardized factor loadings come from a CFA model.

Table 5. Model comparison for DGS-Spanish (data from current research) and DGS-English (data from Zeelenberg et al., 2022)

Model	Compare to model	χ^2	df	p	$\Delta\chi^2$	Δdf	$\Delta\chi^2$ sig.	CFI	ΔCFI	RMSEA [90% CI]	ΔRMSEA	SRMR	ΔSRMSEA
1. Configural invariance		100.13	28	<.001				.977		.063 [.05, .076]		.030	
2. Metric invariance	1	114.97	34	<.001	14.84	6	.02	.974	−.003	.060 [.049, .073]	−.002	.037	.008
3. Scalar invariance	2	195.07	40	<.001	80.09	6	<.001	.950	−.024	.077 [.066, .088]	.017	.056	.019

greed scales, including the English version of the DGS. We tested for configural, metric, and scalar invariance between the Spanish and English scales. As can be seen in Table 5, configural invariance was supported [$\chi^2(28) = 100.13$, $p < .001$, CFI = .977, RMSEA = .063, SRMR = .03]. Next, when equality constraints were placed on item factor loadings (i.e., metric invariance), the fit was not significantly worse. LRT rejected metric invariance. However, it tends to over-reject invariance. Therefore, we closely inspected ΔCFI (= −.003), ΔRMSEA (= −.002), and ΔSRMR (= .008), which led us to the conclusion that there was sufficient evidence for acceptance of metric invariance between the Spanish and English versions of the DGS. Finally, scalar invariance was not supported (ΔCFI = −.024, ΔRMSEA = 0.17, ΔSRMR = .019). We conducted separate multigroup factor analyses using the DGS-English and both versions of the test, Greed *Codicioso* and Greed *Avaricioso*. The obtained results replicated our findings

with the DGS-Spanish. With slightly better comparison indexes for Greed *Avaricioso*, we have incorporated these analyses into Section C of the Electronic Supplementary Material 1 (ESM 1).

Convergent Validity

Convergent validity was examined via correlations between greed and related constructs (see Table 6). As predicted, greed correlated positively with benign envy ($r = .35$, $p < .001$) and materialism ($r = .55$, $p < .001$). The predicted relation between greed and life-satisfaction was not statistically significant. We also found a positive correlation with self-enhancement values ($r = .49$, $p < .001$). Additionally, greed was negatively correlated with self-transcendence values ($r = −.12$, $p = .04$). In ESM 1, we

Table 6. Descriptive information of and correlations between the variables measured, with Cronbach's α on the diagonal

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Greed	.71			.35***	.10	.55***	−.07	−.12*	−.11	−.10	−.12*	.02	−.06	.49***	.27***	.34***	.53***
2. Greed *Codicioso*	—	.65		.37***	.07	.57***	.11	−.08	−.08	−.10	.01	.03	−.10	.50***	.35***	.30***	.56***
3. Greed *Avaricioso*		—	.85	.33***	.14	.53***	−.21**	−.13	−.13	−.09	−.20	.02	−.02	.48***	.21**	.37***	.51***
4. Benign Envy			—	.82	.21***	.28***	.17**	−.01	−.09	.03	.01	.09	.02	.41***	.36***	.35***	.28***
5. Malicious Envy				—	.75	.23***	−.06	−.25***	−.11	−.13*	−.16**	−.26***	−.28***	.23***	.04	.29***	.15**
6. Materialism					—	.78	−.14*	−.14*	−.12*	−.14*	.11	−.03	−.06	.56***	.33***	.36***	.63***
7. Life satisfaction						—	.81	.14*	.07	.08	.09	.13*	.14*	.07	.25***	.02	−.04
8. Self-transcendence values							—	.83	.65***	.79***	.75***	.60***	.66***	.03	.32***	−.07	−.07
9. Universalism nature								—	.83	.37***	.29***	.10	.19***	.03	.13*	−.02	.01
10. Universalism concern									—	.72	.58***	.37***	.37***	−.04	.22***	−.10	−.14*
11. Universalism tolerance										—	.64	.34***	.40***	−.06	.18**	−.13*	−.12*
12. Benevolence care											—	.51	.51***	.14*	.31***	.03	.05
13. Benevolence dependability												—	.74	.08	.34***	−.02	−.04
14. Self-enhancement values													—	.81	.70***	.85***	.82***
15. Achievement														—	.50	.41***	.41***
16. Power dominance															—	.79	.51***
17. Power resources																—	.75
M	3.05	3.04	3.07	3.58	1.70	2.97	3.54	4.88	4.18	4.80	4.81	5.19	5.42	3.97	5.03	3.38	3.50
SD	0.64	0.58	0.69	1.16	0.74	0.64	0.80	0.57	1.07	0.89	0.82	0.65	0.67	0.78	0.74	1.14	1.04

Note. Variables number 1, 2, 3, 6, and 7 were assessed on 5-point scales. Variables number 4, 5, and 8 to 17 were assessed on 6-point scales. *p < .05. **p < .01. ***p < .001.

present the correlations of all variables in different subsamples. Taken all results together, the pattern of correlations indicates a good convergent validity of the DGS-Spanish.

Discussion

We reported on the development of a Spanish version of the Dispositional Greed Scale (DGS; Seuntjens, Zeelenberg, Van De Ven, & Breugelmans, 2015). We presented information on the translation, descriptive statistics and psychometric properties (construct validity, invariance measurement, and internal consistency), and relationships with variables that were found in previous studies with the DGS in other languages. Taken together, all analyses indicate that the DGS-Spanish has been successful in capturing all essential features of the DGS. We found the DGS-Spanish to have a unidimensional factor structure, with acceptable reliability. In addition, we found similar relationships between greed and other variables, as in previous research: Greed correlated positively with benign envy, materialism, and values of self-enhancement and negatively with values of self-transcendence (although the predicted correlations with malicious envy and life-satisfaction were not statistically significant). In short, we can confidently conclude that the DGS-Spanish adequately captures the same construct of greed as the original DGS.

A special, and unexpected, feature that emerged in the translation process of the scale was the precise term for greed in Item 2 of the scale. Greed could be translated by both the terms *codicioso* and *avaricioso*. There were no compelling linguistic reasons nor psychological reasons to choose one term over the other, so we decided to make it an empirical question, creating two versions of the scale that were identical except for the translation of greed. These versions were filled out by different groups of participants. Systematic comparisons of the measurement model underlying the data indicated that both scales have identical properties, suggesting that both terms are equally good translations of greed. As such, we suggest that researchers pick the term that best fits their population of Spanish speakers. In the absence of any compelling reasons to choose one over the other, we suggest researchers pick the scale with *avaricioso*, since its psychometric properties were slightly better (although this might be due to random sample characteristics).

The comparison between the DGS-Spanish and the original DGS in English did not exhibit scalar invariance. This finding opens up several possible interpretations. First, it suggests that people from Colombia may, on average, display higher levels of greed compared to people in the United States. Nevertheless, an alternative explanation

could be linked to the sample compositions. The Colombian sample primarily comprised business students from a high-class university while the US sample showed more diversity in terms of age and economic status. This discrepancy might indicate that business students, as a specific subgroup, tend to exhibit higher levels of greed on average than the general population. Moreover, prior research has already found differences in average greed scores among groups differing in age and country (Hoyer et al., 2023).

Researchers should be cautious when interpreting these results. The metric invariance of the Spanish and English versions of the DGD scales permits the testing of associations between greed scores and other variables across different groups. However, comparing greed scores directly between the two versions should be approached with caution until further evidence on the scalar invariance of the test in other samples is gathered. Additional research is necessary to establish the stability and consistency of the scale across various populations and contexts.

Limitations

We note two possible limitations of our study. First, our respondents were Colombian Business School students, who are not representative of the huge variety of peoples in Spanish-speaking countries. As such, the utility of the Spanish scale should be a matter of empirical scrutiny. As more data will be gathered, in more diverse contexts, so will the adequacy of the scale be further examined. The successful translations in other languages as diverse as Japanese, Mandarin Chinese, Brazilian Portuguese, Russian, and Belarussian provide confidence that the basic psychometric properties of the Spanish translation will hold across applications.

Second, the DGS is not the only instrument to assess dispositional greed, although it is the most widely used and translated scale. There are also the Greed Avoidance subscale from the HEXACO (Lee & Ashton, 2004), the Greed subscale from the Vices and Virtues Scales (Veselka et al., 2014), the Greed Trait Measure (Mussel et al., 2018), the Dispositional Greed Scale by Krekels and Pandelaere (2015), the GR€€D scale (Mussel & Hewig, 2016), and more recently, the Multidimensional Dispositional Greed Assessment (MDGA; Lambie et al., 2022) and the Domain Specific Greed (DOSPEG) questionnaire (Weiß et al., 2023). Although these scales differ in their particular details and items, we are confident that results found with the DGS will compare to those found with these other scales on the basis of direct, empirical scale comparisons by Mussel et al. (2018) and Zeelenberg et al. (2022) who found that all scales (with the exception of the MDGA and the DOSPEG

which were not yet available then) had good psychometric properties and loaded on the same, latent construct.

Conclusion

To summarize, the Spanish translation of the DGS that we presented in this paper holds great promise to extend greed research into parts of the world where at the moment no consensual instrument was available, opening up new possibilities for studying culture-specific antecedents and consequences of greed as well as facilitating cross-cultural (or cross-national) comparisons of the structural role that the motive of greed plays in our socioeconomic lives.

Electronic Supplementary Material

The electronic supplementary material is available with the online version of the article at https://doi.org/10.1027/2698-1866/a000053

ESM 1. Factor analyses of all measures in the study. Comparison between Greed *Codicioso*, Greed *Avaricioso*, and DGS-English.

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Conflict of Interest
The authors have no known conflict of interest to disclose.

Authorship
Catalina Estrada-Mejia: Conceptualization, Methodology, Software, Investigation, Data curation, Writing – Original draft, Reviewing & Editing. Marcel Zeelenberg & Seger Breugelmans: Conceptualization, Methodology, Writing – Original draft, Reviewing & Editing.

Open Science
Open Data: The information needed to reproduce all of the reported results is available at https://researchbox.org/1045 (Estrada-Mejia et al., 2023).

Open Materials: The information needed to reproduce all of the reported methodology is available at https://researchbox.org/1045 (Estrada-Mejia et al., 2023).

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