

MORAL IDENTITY QUESTIONNAIRE (MIQ): ADAPTATION AND PSYCHOMETRIC PROPERTIES IN A SPANISH POPULATION

CUESTIONARIO DE IDENTIDAD MORAL (MIQ): ADAPTACIÓN Y PROPIEDADES PSICOMÉTRICAS EN LA POBLACIÓN ESPAÑOLA

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Abstract

This research aims to develop a Spanish version of the Moral Identity Questionnaire (MIQ) and evaluate its psychometric properties among the Spanish population. Spanish and English speakers developed a Spanish version of the Moral Identity Questionnaire (MIQ) through translation and back-translation. The translated MIQ was administered jointly with the HEXACO and the Dirty Dozen questionnaire to two samples of the general Spanish population [total N = 416 (239 females)]. The validity and reliability of the scale were tested using standard statistical methods. The translated version of the MIQ scale was found to have domain coherence and language clarity. The tested scales have adequate

reliability (>.72). Confirmatory factor analysis, invariance analysis and correlations with other measures of morality confirmed the bifactor solution by yielding adequate results. This study presents the first validation of the MIQ questionnaire with the general Spanish population. MIQ instrument was found to have good psychometric properties, resulting in a new moral and social research tool.

Keywords: moral identity; moral emotions; scale translation; Spanish version.

Resumen

Esta investigación tiene como objetivo desarrollar una versión en español del Cuestionario de Identidad Moral (MIQ) y evaluar sus propiedades psicométricas entre la

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población española. Hablantes de español e inglés desarrollaron una versión en español del Cuestionario de Identidad Moral (MIQ) mediante traducción y retrotraducción. El MIQ traducido se administró junto con el cuestionario HEXACO y el Dirty Dozen a dos muestras de la población general española [N total = 416 (239 mujeres)]. La validez y fiabilidad de la escala se probaron utilizando métodos estadísticos estándar. Se encontró que la versión traducida de la escala MIQ tenía coherencia de dominio y claridad lingüística. Las escalas probadas tienen una fiabilidad adecuada ($>.72$). El análisis factorial confirmatorio, el análisis de invarianza y las correlaciones con otras medidas de moralidad confirmaron la solución bifactorial al obtener resultados adecuados. Este estudio presenta la primera validación del cuestionario MIQ con la población general española. Se encontró que el instrumento MIQ tiene buenas propiedades psicométricas, resultando en una nueva herramienta de investigación moral y social.

Palabras clave: identidad moral; emociones morales; traducción de escalas; versión española.

Introduction

The Moral Identity Questionnaire

The Moral Identity Questionnaire (MIQ) by Black and Reynolds (2016) measures two core dimensions of morality using 20 items evaluated through a 5- or 6-point Likert scale: Moral Integrity and Moral Self. A person's importance of moral principles is conceptualized in items 1 to 8 as the subscale Moral Self. The importance of acting according to their moral principles is conceived as moral integrity, represented in items 9 to 20. The instrument has shown high reliability and validity, with significant factor loadings and fit indices ($\lambda_s > .37$, $ps < .05$; $\chi^2 = 325$, $p < .001$; SRMSR = .06; RMSEA = .059; TLI = .89). Internal consistency is strong ($\alpha = .91$ for MIQ, $\alpha = .89$ for Moral Integrity, $\alpha = .86$ for Moral Self). The scales correlate with constructs such as assertiveness, self-regulation, and well-being seeking.

An adapted Persian version (Abbasi et al., 2020) confirmed the two-factor structure and reliability ($\chi^2 = 2.93$, $p < .001$, RMR = .04, RMSEA = .07, TLI = .90,

CFI = .90, $\alpha = .76$ for MIQ, $\alpha = .70$, and $\alpha = .74$ for the subscales). It also showed strong associations with other moral and personality traits.

This study aims to develop a Spanish adaptation of the MIQ, hypothesizing that it will uphold similar psychometric properties and a nomological network consistent with previous research mapping the moral domain using well-known assessment tools (Ashton et al., 2014; Cohen & Morse, 2014; Lee & Ashton, 2014). All materials, datasets, analyses' scripts, and supplementary material can be found at the Open Science Framework (OSF, https://osf.io/eqt5m/?view_only=df7b6c4ecf8d4e3284862d1a30b83ccb)

STUDY 1

The objective of Study 1 was to create and validate a Spanish version of the MIQ, mirroring the original study's structure, validity, and reliability. The Spanish MIQ was administered to a young adult sample for preliminary validation.

Method

Participants and Study Design

The study included 139 young adults (average age 21.70 ± 2.27 ; 104 females) from Spain who completed the MIQ through Qualtrics (TM). The sample size of 100-150 is statistically sufficient for CFA with limited indicators and factors as established by Holgado-Tello et al. (2018).

Measures

The MIQ

The Spanish adaptation of the MIQ (see ESM 1) followed a translation-back-translation procedure (Triandis, 1980) conducted by linguistics and psychology experts.

The philologist who translated the original version to Spanish was from the language services of the {blinded for peer-review}. After ensuring translation fidelity, a pilot study (see ESM 2) confirmed the Spanish MIQ's statistical properties were consistent with the original version (Black & Reynolds, 2016).

Analytical Plan

We used a 5-point Likert scale for the Spanish MIQ items, calculating means, standard deviations, skewness, and quantile scores. Steiger's Z tests (1980) compared original correlations (Black & Reynolds, 2016) with the present study's findings. Based on prior empirical evidence, we hypothesized a superior fit for a second-order two-factor model and tested this against three alternatives using maximum likelihood estimation with robust standard errors, suitable for small data sets. Goodness-of-fit was evaluated using RMSEA (<.08, IC = 90%), Chi-square (χ^2 and p-value), CFI (>.95), TLI (>.90), AIC, BIC, and SRMR (Erkut, 2010; Hu & Bentler, 1999). Reliability was assessed using Cronbach's alpha and McDonald's ω , as the latter better accommodates real-world data complexities (Viladrich et al., 2017).

Results of Study 1

Descriptive statistics

In the Spanish adaptation of the Moral Identity Questionnaire (MIQ), our research revealed consistent and reliable patterns across two distinct studies. Both studies exhibited similar trends in the scores for the Moral Identity scale and its subscales, namely Moral Integrity and Moral Self. In Study 1, the mean scores were 79.66 for Moral Identity, 45.18 for Moral Integrity, and 34.48 for Moral Self, while in Study 2, these scores were slightly higher at 80.06, 45.39, and 34.67, respectively. The standard deviations in Study 1 (7.61 for Moral Identity, 5.81 for Moral Integrity, and 3.04 for Moral Self) and in Study 2 (6.91, 5.08, and 3.19, respectively) suggested a moderate spread in responses. Notably, skewness values across all subscales were minimal, suggesting a symmetrical distribution of responses around the mean. For instance, the skewness in Study 1 for Moral Identity was near zero (-0.03).

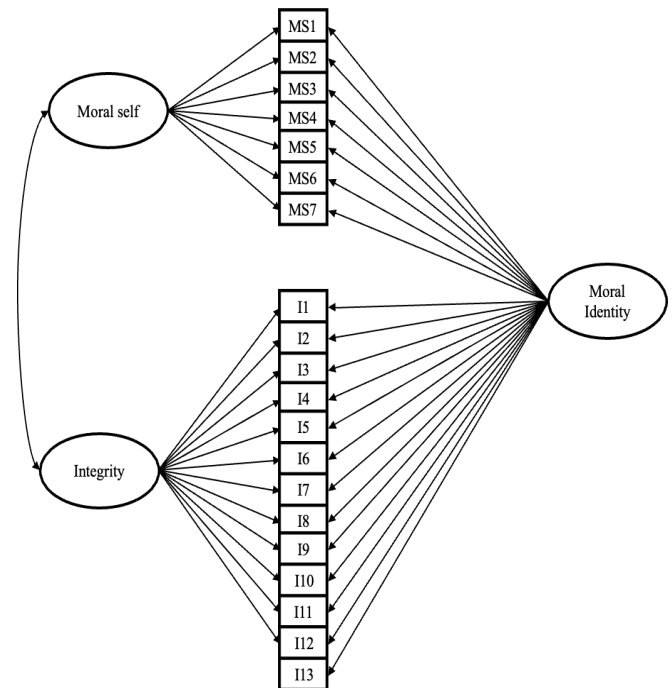
In contrast, Study 2 showed a slight positive skewness for Moral Identity (0.19).

Factor Structure

Table 1 presents fit indicators for the second-order two-factor model originally proposed by Black & Reynolds (2016). We found poor fit initially but improved it by reassigning Item 4 due to its significant cross-loading in the Moral Integrity subscale ($\lambda = 22.65$, $\Delta\chi^2(1, n = 139) = 10.38$, $p < .001$). Retesting with this modified structure yielded better fits (χ^2 diff for two factors = 46.95, $p < .001$); (χ^2 diff for one factor = 47.34, $p < .001$). A bifactor model was selected (Figure 1) based on superior fit indices (see Table 1).

Figure 1.

Bifactor model tested. We hypothesized a second-order two-factor model, but a bifactor model fit the data better.



Note: MS: Moral Self; I: Integrity.

Table 1.*Confirmatory factor Analysis (CFAs) of the MIQ.*

Model	Estimated parameters	χ^2	df	SRMR	RMSEA	CFI	TLI	AIC	BIC
Dataset 1									
1a. Second order two-factor	42	255	168	.06	.06	.87	.85	6164	6344
2a. One factor model	40	302	170	.08	.08	.70	.70	6181	6294
3a. Two-factor	41	255	169	.09	.06	.83	.81	6135	6252
4a. Bifactor model	60	145	150	.06	.05	.94	.91	6126	6298
5a. Bifactor + crossloading	117	139	147	.07	.04	.96	.94	6121	6294
Dataset 2									
1b. Second order two-factor	42	310	168	.07	.06	.86	.85	13035	13192
2b. One factor model	40	465	170	.09	.08	.72	.68	13187	13332
3b. Two-factor:	41	310	169	.07	.06	.86	.85	13033	13181
4b. Bifactor model	60	233	150	.05	.05	.92	.90	12972	13190
5b. Bifactor + crossloading	117	204	147	.05	.04	.95	.93	12970	13188

Note. N = 287. Confirmatory factor analyses calculated with maximum likelihood estimation. MIQ =Moral Identity Questionnaire; RMSA = root-mean-square error of approximation; BIC = Bayesian information criterion; AIC = Akaike information criterion; CFI = comparative fit index; TLI = Tucker-Lewis index.

Reliability

In our examination of the Moral Identity Questionnaire (MIQ) and its subscales, high reliability and internal consistency were observed across two studies. The ω reliability coefficients for the MIQ and its subscales varied from .84 to .89, indicating strong consistency in construct measurement. Cronbach's Alpha showed robust scores ranging from .78 to .85 across the scales.

Further strengthening the reliability assessment, we analyzed the standardized item factor loadings of the MIQ using a bifactor structural model. The majority of items demonstrated strong factor loadings, signifying their substantial contributions to the model. Specifically, in the analysis, item loadings on the Moral Identity factor predominantly ranged well above the .40 threshold. Notably, only the factor loading of item 3 fell below this threshold.

Discussion of Study 1

In Study 1, we successfully adapted and validated the Spanish version of the Moral Identity Questionnaire (MIQ), originally developed by Black and Reynolds (2016). Our findings indicated that the Spanish MIQ retains the structural validity and reliability seen in the original version. This establishes the first Spanish version of the MIQ, enhancing its utility in cross-cultural research.

A notable adjustment in our version was the reassignment of item 4 ("I want other people to know they can rely on me") from the Moral Self to the Moral Integrity subscale. Our analyses identified significant cross-loading of this item on the Moral Integrity subscale, prompting an evaluation of its placement. A review of the item's interpretation led us to recognize cultural nuances, as defined by Hofstede (2001), that could be influencing this shift. Specifically, the Spanish society's collectivist orientation may lead to interpreting the item more as an aspect of moral integrity rather than self-interest. Thus, we reallo-

cated the item to the Moral Integrity subscale to better reflect its nuanced interpretation within Spanish culture. Future research should examine the metric invariance between the U.S. and Spanish versions of the MIQ to further validate this modification.

Regarding model fit, the bifactor model emerged as the best-fitting model after this adjustment, with generally acceptable factor loadings. However, the factor loading of item 3 was slightly below the recommended .40 threshold. This warrants additional investigation but does not significantly detract from the scale's overall reliability.

In terms of reliability indices, both the MIQ and its subscales displayed strong internal consistency, further supporting the Spanish version's utility. Although our study offers initial evidence of the scale's reliability, future research should explore test-retest reliability to assess the stability of the scores over time. Similarly, additional studies are needed to delve into construct validity and to confirm our initial findings on the Spanish MIQ's validity.

STUDY 2

The objective of Study 2 was to internally replicate Study 1's analysis of the MIQ's internal structure using a distinct Spanish sample and to investigate its nomological network in relation to key personality dimensions.

Method

Participants and Procedure

Study 2 involved 277 young adults (239 females, age: 20.85 ± 5.71) from Spain. Participants completed the MIQ, Dirty Dozen, and HEXACO scales through a 45-minute Qualtrics (TM) survey. All participants were granted course credits for participation.

Instruments

Dirty Dozen

The Dirty Dozen (DD, Jonason & Webster, 2010) is a 12-item tool designed to assess dark personality traits like Machiavellianism, narcissism, and psychopathy. Utilizing

a 5-point Likert scale, its Spanish version (Nohales Nieto et al., 2017) has shown Cronbach alphas of 0.78, 0.83, and 0.59 for Machiavellianism, narcissism, and psychopathy scales, respectively.

HEXACO

Going beyond the conventional five-dimensional (OCEAN) model of personality, the HEXACO (Ashton et al., 2014; Ashton & Lee, 2009; Lee & Ashton, 2008; Marcus et al., 2007) includes an additional Honesty-Humility dimension. The tool uses a 5-level Likert scale for assessment, and its Spanish version (Roncero et al., 2013) exhibits good internal consistency ($\alpha > .70$) across all indexes.

Analytical plan

We employed a CFA model to assess invariance across two samples, using equality constraints as per standard procedures (Meredith, 1993). Three invariance levels – configural, metric, and scalar – were tested (Timmons, 2010). Goodness of fit for configural invariance was defined by specific cut-offs (CFI $> .9$, RMSEA $< .10$, SRMR $< .05$). Metric and scalar invariance were evaluated using LRT and Chen's guidelines (2007) for unequal sample sizes ($\Delta\text{CFI} > .01$, $\Delta\text{RMSEA} < .01$ & $\Delta\text{SRMR} < .03$ for metric; $\Delta\text{SRMR} < .01$ for scalar).

Validation data for the MIQ questionnaire were compared to HEXACO dimensions like Humility and Agreeableness, which are negatively related to misconduct (Cohen & Morse, 2014). We hypothesize a positive correlation between MIQ and these HEXACO dimensions.

We also anticipate negative correlations between MIQ subscales and dark triad traits like Machiavellianism and Psychopathy, known to be positively associated with misconduct (Djeriouat & Trémolière, 2014; Egan et al., 2015).

Results of Study 2

Factor Structure

Using procedures identical to Study 1, we identified a bifactor model as the best fit for the 13-item Moral Integrity and 7-item Moral Self subscales (χ^2 estimated param-

eters = 119, $df=150$, $N=287$) = 310, $p < .001$, SRMR = .05, RMSEA = .04, CFI = .95, TLI = .93, AIC = 12970, BIC = 13188). Item 4 was reassigned from the Moral Self to the Moral Integrity subscale based on significant cross-loading ($\Delta\chi^2(1, N=277) = 11.27$, $p < .001$).

Measurement Invariance of the Scales

Tests for measurement invariance across two studies' samples were conducted. The baseline model (Model 1) showed adequate fit (CFI = .91, RMSEA = 0.05, SRMR = .05; Table 2). Invariant model (Model 2) met Chen's (2007) criteria with $\Delta CFI = .04$, $\Delta RMSEA < .001$, $\Delta SRMR = .02$. Scalar invariance was confirmed in Model 3, indicated by values like $\Delta CFI = .03$, $\Delta RMSEA < .001$, $\Delta SRMR < .001$ (Table 2).

Nomological network

Positive correlations were found between MIQ and HEXACO facets related to Humility (.59) and Greed-Avoidance (.38), among others, as supported by Cohen et al. (2014). Negative correlations were identified between MIQ and Dark Triad dimensions, ranging from -.23 to -.49.

Using MIQ scales as dependent variables, multiple regressions revealed Psychopathy was inversely related to Moral Identity and Integrity subscale. Humility and Openness were positively associated, and Extraversion was related to Moral Identity and Self subscale (see ESM 3).

Discussion of Study 2

Study 2 further validates the MIQ for use in a Spanish-speaking population through internal replication and invariance analysis. While the study did not achieve CFA absolute fit, relative fit indices like RMSEA indicate the MIQ's Spanish version aligns closely with the original (e.g., RMSEA THIS STUDY = .04 vs. RMSEA BLACK = .065; (Black & Reynolds, 2016)). Psychometric properties were similar across both versions, though we observed a lower range in CFA loading factors for the Spanish MIQ, suggesting the need for additional research.

We modified the Moral Self subscale based on significant cross-loadings and adopted a bifactor model, consistent with recommendations by Black & Reynolds (2016, p. 126). The study confirmed strong scalar invariance, with constrained correlations and intercepts, as suggested by Chen (2007).

Table 2.

Fit indices for invariance tests

Model	χ^2	df	SRMR	RMSEA	CFI	TLI	AIC	BIC	ΔCFI	$\Delta RMSEA$	$\Delta SRMR$
Model 1: Configural Invariance	427	298	.05	.05	.91	.89	18287	18930			
Model 2: Metric invariance	493	336	.07	.05	.87	.86	18277	18769	.04	.00	.02
Model 3: Full scalar invariance	504	353	.07	.05	.90	.89	18254	18678	.03	.00	.00

Note. Invariance analyses calculated with maximum likelihood estimation with robust standard errors (MLR) estimation. RMSEA = root-mean square error of approximation; BIC = Bayesian information criterion; AIC = Akaike information criterion; CFI = comparative fit index; TLI = Tucker-Lewis index.

Reliability was evaluated using both Cronbach's α and ω , aligning with Padilla and Divers (2015). All values demonstrated good reliability, consistent across studies. Correlation analyses aligned with previous work, showing the significant overlap between MIQ subscales and both the HEXACO dimensions and the Dark Triad (Black & Reynolds, 2016; Sonne & Gash, 2018). This supports the moral directionality of MIQ's Spanish version, including strong inverse correlations with Dark Triad traits and positive correlations with aspects of Openness to Experience (Athota et al., 2009).

General discussion

Our studies aimed to validate a Spanish version of the Moral Identity Questionnaire (MIQ), initially designed to assess moral principles and actions separate from religious or political views. Our data confirms that the Spanish MIQ is a functional tool, with no differences in intercorrelations between the original and translated versions of the scale and its subscales.

In alignment with the nomological network of the MIQ, the Humility dimension of the HEXACO positively correlated with all MIQ measures (Cohen & Morse, 2014). Conversely, strong negative correlations were found with the Dark Triad scales, consistent with previous work linking Machiavellianism and psychopathy to reduced prosocial behavior (Zuo et al., 2016).

Limitations include a small, gender-skewed sample and the absence of criterion validity. These limitations arose from the constraints of a larger Ph.D. project (Lakens, 2021) and suggest areas for future research, such as testing for gender and age invariance (Narvaez et al., 2011).

The MIQ holds potential for applications in academia and organizations interested in assessing moral identity. Our findings underscore its utility in capturing the relationship between moral self-concept and prosocial behaviors.

In conclusion, this work represents the first validation of the Spanish MIQ and indicates its suitability for re-

searchers in various fields interested in the moral domain. We encourage further validation efforts, both within Spain and South America and in other languages.

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