Construction and Psychometric Properties of the Envy Questionnaire (ENV-25) in High School Students in the City of Trujillo

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Article

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Generalities:	
• Level:	III
• Sustainable Development Goal and Target:	SDG 3: Good Health and Well-being
• Research Line	Psychometrics
• University Social Responsibility Line:	Health Promotion, Nutrition, and Food Safety

1. Introduction

Envy is a complex social emotion that emerges from processes of social comparison, in which an individual perceives a disadvantage compared to another person's achievements, attributes, or possessions. This emotion, often denied or misinterpreted, can have significant consequences for self-esteem, emotional health, and interpersonal relationships, especially at developmental stages such as adolescence. According to Navarro-Carrillo et al. (2017), envy combines cognitive, affective, and behavioral components, and its expression is determined by both personal factors and the sociocultural context in which it develops. In adolescents, this emotion can be intensified by social pressure, the desire to belong to a group, and constant exposure to comparisons, especially in competitive academic environments or those influenced by social media.

Envy has been defined as a negative social emotion that arises when a person lacks a desired quality, achievement, or possession that another person possesses. This emotion can be expressed cognitively, through thoughts of comparison with others; emotionally, through feelings of frustration or resentment; and behavioral, in the form of hostile or avoidant attitudes (Carrillo et al., 2016; Navarro-Carrillo et al., 2017). From this multidimensional perspective, envy can not only be destructive—when accompanied by hostility, low self-esteem, and deterioration of social relationships—but can also manifest itself constructively, serving as a source of motivation for

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personal improvement (Martínez Mares, 2021). This duality makes it necessary to rigorously address its dimensions, especially in contexts where healthy emotional development is sought.

During adolescence, students face challenges related to their personal identity, self-image, and social acceptance. In this process, feelings of inferiority and envy commonly emerge, especially in contexts where success or appearance are overvalued. Research such as that by Alcázar Durán (2020) in Metropolitan Lima has shown that more than 50% of adolescents experience envy in academic and social situations, affecting their self-esteem and emotional well-being. Internationally, Menzies and Menzies (2020) found that adolescents with high levels of envy were 22% more likely to present symptoms of anxiety and depression, reinforcing the importance of studying this emotion as a risk factor for mental health.

In the city of Trujillo, there are no current studies that offer a rigorous psychometric evaluation of this emotion in adolescent schoolchildren. This lack of knowledge limits the ability of mental health and education professionals to adequately identify and address the effects of envy on students' psychosocial development. Considering the potential impact of this emotion, it is essential to have valid, reliable, and culturally adapted instruments that allow for accurate assessment in local school contexts. Furthermore, this need is framed within Sustainable Development Goal (SDG) 3: Good Health and Well-being, specifically target 3.4, which seeks to reduce risks associated with mental health by 2030 through the prevention and timely treatment of psychoemotional factors that affect well-being.

Given this scenario, the following research question was posed: What are the psychometric properties of the Envy Questionnaire (ENV-25) in high school students in the city of Trujillo? In response to this question, the study's general objective was to construct and determine the psychometric properties of the Envy Questionnaire (ENV-25) in this population. Consequently, the following specific objectives were proposed: to construct the instrument specifications table; to establish evidence of validity based on the questionnaire content; to conduct a descriptive analysis of the items; to determine the validity of the internal structure; to establish validity with other external variables; to evaluate reliability by internal consistency using the omega coefficient; and finally, to construct norms and cutoff points for the ENV-25 in adolescent schoolchildren in Trujillo.

This research was justified by its scientific, social, and educational value. From an academic perspective, it provided a measurement instrument for envy adapted to the adolescent population of Trujillo, useful for both future research and practical interventions. Socially, the research sought to promote students' emotional well-being by enabling early detection of this emotion and its appropriate management. Educationally, it offered teachers, counselors, and school psychologists a tool to.

2. Method

This research was quantitative in approach, based on the statistical analysis of data obtained from a representative sample using a questionnaire designed to measure envy in adolescents. This was a basic study, as its main purpose was the theoretical and methodological development of a psychometric instrument, with no immediate application in clinical or educational contexts. The design adopted was non-experimental and cross-sectional, as no variables were manipulated and data were collected at a single time point. Furthermore, it was an instrumental study, aimed at constructing and validating a measurement tool in accordance with the guidelines of the American Psychological Association (APA), the American Educational Research Association (AERA), and the National Council on Measurement in Education (NCME, 2014).

The central variable of the study was envy, defined as a complex emotion manifested by an unfavorable social comparison and which can involve thoughts of inferiority, feelings of frustration, and behaviors of rejection or criticism toward others. The study was approached from

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a three-dimensional perspective, comprised of cognitive, emotional, and behavioral dimensions, each operationalized in specific items within the questionnaire.

The population consisted of 41,221 high school students from public and private educational institutions in the city of Trujillo, according to data from the National Institute of Statistics and Informatics (INEI, 2024). The sample was selected using non-probability convenience sampling, based on accessibility and availability criteria. Students between the ages of 13 and 17, enrolled in the current school year, who voluntarily agreed to participate and presented authorization signed by their parents or guardians were included. Adolescents with a previous diagnosis of psychological disorders that could interfere with understanding or responding to the items were excluded.

Data collection was conducted using a survey technique, using the Envy Questionnaire (ENV-25), designed by the study authors. The questionnaire consisted of 25 items distributed across three dimensions: cognitive, emotional, and behavioral. Responses were organized on a 4-point Likert-type scale: Never (1), Rarely (2), Almost Always (3), and Always (4). The questionnaire was administered collectively, in physical format, and took an average of 5 to 10 minutes per participant.

The content validity of the instrument was assessed using expert judgment. Eight psychology specialists with master's or doctoral degrees analyzed each item based on the criteria of clarity, coherence, relevance, and pertinence. Aiken's V coefficient was used as a statistical indicator, accepting only items with values greater than 0.80, as indicated by Merino and Livia (2009) and Penfield and Giacobbi (2004).

Internal structural validity was assessed using two procedures. First, an exploratory factor analysis (EFA) was performed using the least squares method and oblique rotation (Oblimin), eliminating items with factor loadings below 0.40. Subsequently, a confirmatory factor analysis (CFA) was conducted, examining the model's overall fit indices: the comparative fit index (CFI), the goodness-of-fit index (GFI), the root mean square error of approximation (RMSEA), and the root mean square standardized residual (SRMR). CFI and GFI values greater than 0.90 were considered adequate, as were RMSEA and SRMR values less than 0.08, and a χ^2/df ratio less than 5.0, as recommended by Ferrando and Lorenzo-Seva (2014).

The instrument's reliability was determined using the omega coefficient, a robust measure of internal consistency, with values equal to or greater than 0.75 considered adequate. This statistic allowed for the internal stability of the dimensions evaluated, demonstrating that the questionnaire items consistently measured the construct of envy in adolescents.

Finally, the ethical aspects established by the César Vallejo University Research Ethics Code were taken into account. The study was approved by the corresponding ethics committee and complied with the principles of beneficence, respect, and justice. Data confidentiality, voluntary participation, anonymity of respondents, and integrity in the processing and reporting of the results obtained were guaranteed.

3. Results

Table 1 shows the content validity assessment of the Envy Questionnaire (ENV-25) under the evaluation criterion of 08 expert judges, using Aiken's V coefficient, in the criteria of clarity, coherence and relevance, showing adequate scores V>.80 and with adequate confidence intervals, considering it valid and acceptable, showing that all the items were within the acceptable value. According to Aiken (1985), values of the V coefficient greater than 0.80 indicate an adequate degree of agreement among the judges, which supports the content validity of the items evaluated.

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Table 1. Content validity of the Envy Questionnaire (ENV-25).

Ítems	Clarity					Coherence					Relevance				
	M	V	IC 95%			M	V	IC 95%			M	V	IC 95%		
			L		U			L		U			L		U
i1	1.0	1.0	[0.57	-	1.00]	1.0	1.0	[0.57	-	1.00]	1.0	1.0	[0.57	-	1.00]
i2	1.0	1.0	[0.57	-	1.00]	1.0	1.0	[0.57	-	1.00]	1.0	1.0	[0.57	-	1.00]
i3	1.0	1.0	[0.57	-	1.00]	1.0	1.0	[0.57	-	1.00]	1.0	1.0	[0.57	-	1.00]
i4	1.0	1.0	[0.57	-	1.00]	1.0	1.0	[0.57	-	1.00]	1.0	1.0	[0.57	-	1.00]
i5	0.9	0.8	[0.44	-	0.98]	0.9	0.8	[0.44	-	0.98]	1.0	1.0	[0.57	-	1.00]
i6	1.0	1.0	[0.57	-	1.00]	1.0	1.0	[0.57	-	1.00]	1.0	1.0	[0.57	-	1.00]
i7	1.0	1.0	[0.57	-	1.00]	1.0	1.0	[0.57	-	1.00]	1.0	1.0	[0.57	-	1.00]
i8	1.0	1.0	[0.57	-	1.00]	1.0	1.0	[0.57	-	1.00]	1.0	1.0	[0.57	-	1.00]
i9	1.0	1.0	[0.57	-	1.00]	1.0	1.0	[0.57	-	1.00]	1.0	1.0	[0.57	-	1.00]
i10	1.0	1.0	[0.57	-	1.00]	1.0	1.0	[0.57	-	1.00]	1.0	1.0	[0.57	-	1.00]

Note: M= mean, V= Aiken, CI= confidence interval, L= lower limit, U= upper limit.

Table 2 shows the content validity analysis of the Envy Questionnaire (ENV-25) from items 11 to 20, under the evaluation criteria of 08 expert judges using Aiken's V coefficient, in clarity, coherence and relevance, showing adequate scores V>.80 and with adequate confidence intervals, considering it valid and acceptable, showing that all items were within the acceptable value. Likewise, Merino and Livia (2009) point out that the use of confidence intervals improves the precision in the interpretation of the V coefficient, strengthening the evidence of validity of the items evaluated.

Table 2. Content validity of the Envy Questionnaire (ENV-25).

Ítems	Clarity					Coherence					Relevance				
	M	V	IC 95%			M	V	IC 95%			M	V	IC 95%		
			L		U			L		U			L		U
i11	0.9	0.8	[0.44	-	0.98]	1.0	1.0	[0.57	-	1.00]	1.0	1.0	[0.57	-	1.00]
i12	1.0	1.0	[0.57	-	1.00]	0.9	0.8	[0.44	-	0.98]	1.0	1.0	[0.57	-	1.00]
i13	1.0	1.0	[0.57	-	1.00]	0.9	0.8	[0.44	-	0.98]	1.0	1.0	[0.57	-	1.00]
i14	1.0	1.0	[0.57	-	1.00]	1.0	1.0	[0.57	-	1.00]	1.0	1.0	[0.57	-	1.00]
i15	1.0	1.0	[0.57	-	1.00]	1.0	1.0	[0.57	-	1.00]	1.0	1.0	[0.57	-	1.00]
i16	1.0	1.0	[0.57	-	1.00]	1.0	1.0	[0.57	-	1.00]	1.0	1.0	[0.57	-	1.00]

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i17	1.0	1.0	[	0.57	-	1.00	]	1.0	1.0	[	0.57	-	1.00	]	1.0	1.0	[	0.57	-	1.00	]
i18	1.0	1.0	[	0.57	-	1.00	]	1.0	1.0	[	0.57	-	1.00	]	1.0	1.0	[	0.57	-	1.00	]
i19	0.9	0.8	[	0.44	-	0.98	]	1.0	1.0	[	0.57	-	1.00	]	0.9	0.8	[	0.44	-	0.98	]
i20	1.0	1.0	[	0.57	-	1.00	]	1.0	1.0	[	0.57	-	1.00	]	1.0	1.0	[	0.57	-	1.00	]

Note: M= mean, V= Aiken, CI= confidence interval, L= lower limit, U= upper limit

Table 3 shows the content validity analysis of the Envy Questionnaire (ENV-25) from items 21 to 30, under the evaluation criteria of 08 expert judges using Aiken's V coefficient, in clarity, coherence and relevance, showing adequate scores V>.80 and with adequate confidence intervals, considering it valid and acceptable, showing that all items were within the acceptable value. According to Merino and Livia (2009), values of the V coefficient above 0.80 reflect adequate consistency between evaluators, while the use of confidence intervals allows a more precise and robust interpretation of the content validity of the items.

Table 3. Content validity of the Envy Questionnaire (ENV-25).

Ítems	Clarity						Coherence						Relevance					
	M	V	IC 95%				M	V	IC 95%				M	V	IC 95%			
			L		U				L		U				L		U	
i21	1.0	1.0	[	0.57	-	1.00	]	1.0	1.0	[	0.57	-	1.00	]	1.0	1.0	[	0.57	-	1.00	]
i22	1.0	1.0	[	0.57	-	1.00	]	1.0	1.0	[	0.57	-	1.00	]	1.0	1.0	[	0.57	-	1.00	]
i23	1.0	1.0	[	0.57	-	1.00	]	1.0	1.0	[	0.57	-	1.00	]	1.0	1.0	[	0.57	-	1.00	]
i24	1.0	1.0	[	0.57	-	1.00	]	1.0	1.0	[	0.57	-	1.00	]	1.0	1.0	[	0.57	-	1.00	]
i25	1.0	1.0	[	0.57	-	1.00	]	1.0	1.0	[	0.57	-	1.00	]	1.0	1.0	[	0.57	-	1.00	]
i26	1.0	1.0	[	0.57	-	1.00	]	1.0	1.0	[	0.57	-	1.00	]	1.0	1.0	[	0.57	-	1.00	]
i27	1.0	1.0	[	0.57	-	1.00	]	1.0	1.0	[	0.57	-	1.00	]	1.0	1.0	[	0.57	-	1.00	]
i28	1.0	1.0	[	0.57	-	1.00	]	1.0	1.0	[	0.57	-	1.00	]	1.0	1.0	[	0.57	-	1.00	]
i29	1.0	1.0	[	0.57	-	1.00	]	1.0	1.0	[	0.57	-	1.00	]	1.0	1.0	[	0.57	-	1.00	]
i30	1.0	1.0	[	0.57	-	1.00	]	1.0	1.0	[	0.57	-	1.00	]	1.0	1.0	[	0.57	-	1.00	]

Note: M= mean, V= Aiken, CI= confidence interval, L= lower limit, U= upper limit

Table 4 shows that the response frequency of the items in the ENV-25 questionnaire ranges between 6% and 51.6%, without exceeding the F<80% threshold, indicating that there are no alternatives with excessive predominance, suggesting an adequate distribution of responses (Muñiz, 2018). The means obtained a result that varies between 1.8 and 2.15, while the standard deviations are between 0.93 and 1.05, indicating a low dispersion of the data. In relation to the asymmetry and kurtosis values, these results fluctuate between 0.90 and -1.06, falling within the acceptable range of ±1.5, which allows assuming an approximately normal distribution (George & Mallery, 2012). Likewise, the corrected homogeneity index (IHC) exceeds the value of 0.30,

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which is considered an adequate indicator of internal consistency and shows that the items measure the same variable (Domínguez-Lara, 2018). On the other hand, with respect to the communalities (h^2), it is observed that some items have values lower than 0.50, which according to Lloret-Segura et al. (2014) could indicate an insufficient representation of the common factor, affecting the adequacy of the factorial model.

Table 4. Descriptive statistical analysis of the Envy Questionnaire (ENV-25) items.

Dimensions	Ítems	Frequency				M	DE	g^1	g^2	h^2	IHC
		1	2	3	4						
Cognitive	8	37.2	28.8	24	10	2.07	1.01	0.46	-0.97	0.36	0.58
	10	38	37.2	18.8	6	1.93	0.90	0.65	-0.45	0.57	0.59
	11	38	34.4	16.8	10.8	2	0.99	0.66	-0.63	0.68	0.49
	15	47.2	32.8	12.4	7.6	1.8	0.93	0.97	0.01	0.45	0.63
	18	51.6	22.8	18	7.6	1.82	0.99	0.86	-0.51	0.44	0.66
	20	42.4	29.2	21.6	6.8	1.93	0.95	0.62	-0.74	0.46	0.63
	22	41.2	29.2	18.8	10.8	1.99	1.02	0.64	-0.79	0.53	0.62
	25	39.6	30.8	18.4	11.2	2.01	1.02	0.63	-0.78	0.51	0.65
	27	34	28.8	25.6	11.6	2.15	1.02	0.36	-1.06	0.61	0.59
	29	34.4	30.8	20.4	14.4	2.15	1.05	0.45	-1.02	0.64	0.55

Note: Response frequency; 1: never; 2: or almost never; 3: almost always; 4: always; M = mean; SD = standard deviation; g1 = Fisher's coefficient of skewness; g2 = Fisher's coefficient of kurtosis; IHC = corrected homogeneity index; h2 = communality

In Table 5 (Domínguez-Lara, 2018), the means range between 1.74 and 2.17, and the standard deviations range between 0.92 and 0.06, suggesting a low dispersion in the responses, showing a certain homogeneity in the evaluations of the evaluated. Regarding the skewness and kurtosis values, which are between 0.95 and -1.14, these are within the accepted range of ±1.5, a criterion that indicates an approximately normal distribution (George & Mallery, 2012; Villegas, 2014). However, in this specific case, no characteristics of normality are evident. On the other hand, the corrected homogeneity index (IHC) shows that the response frequency of the items in the ENV-25 questionnaire varies between 6% and 50.8%, without exceeding 80%, indicating that there are no alternatives selected by a significant majority, allowing adequate item discrimination) exceeds the minimum acceptable value of 0.30, which suggests adequate internal consistency and that the items measure the same dimension or construct (Domínguez-Lara, 2018). Finally, it is observed that the communalities (h^2) are greater than 0.50, which, although usually considered adequate, in this case suggests a possible inadequate correlation between the factors of the instrument, as Lloret-Segura et al. (2014) warn in studies on exploratory factor analysis.

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Table 5. Descriptive statistical analysis of the Envy Questionnaire (ENV-25) items.

Dimensions	Ítems	Frequency				M	DE	g^1	g^2	h^2	IHC
		1	2	3	4						
Emotional	3	47.6	31.6	13.2	7.6	1.81	0.94	0.95	-0.07	0.61	0.48
	5	42.4	28.8	18.8	10	1.96	1.01	0.67	-0.74	0.39	0.69
	6	50.4	29.6	15.2	4.8	1.74	0.89	0.94	-0.07	0.41	0.63
	9	46.8	31.2	14	8	1.83	0.95	0.91	-0.20	0.50	0.47
	13	42	31.2	13.2	13.6	1.98	1.05	0.75	-0.67	0.39	0.67
	14	37.2	26.8	24	12	2.11	1.04	0.43	-1.07	0.50	0.63
	17	50.8	28.4	14.8	6	1.76	0.92	0.97	-0.09	0.49	0.57
	19	37.2	28	20.8	14	2.12	1.06	0.47	-1.05	0.48	0.65
	21	35.2	26.8	24	14	2.17	1.06	0.37	-1.14	0.45	0.60
	23	38	30	18.4	13.6	2.08	1.05	0.56	-0.93	0.54	0.57

Note: Response frequency; 1: never; 2: or almost never; 3: almost always; 4: always; M = mean; SD = standard deviation; g1 = Fisher's coefficient of skewness; g2 = Fisher's coefficient of kurtosis; IHC = corrected homogeneity index; h2 = communality

Table 6 shows that the response frequency for the items in the ENV-25 questionnaire ranges from 4.8% to 49.2%, without exceeding 80%. This indicates that there are no alternatives chosen by the majority of participants, which favors variability in the responses and avoids centralized tendency (Domínguez-Lara, 2018). The means range between 1.73 and 2.9, while the standard deviations are between 0.92 and 1.08, which denotes low dispersion, that is, the responses are relatively consistent (Villegas, 2014). Regarding asymmetry and kurtosis, the values are between 1.21 and -1.05. These results are within the accepted range of ±1.5 to assume an approximately normal distribution, although certain values close to the extremes could indicate slight deviations from normality (George & Mallery, 2012; Lloret-Segura et al., 2014). Regarding the corrected homogeneity index (IHC), all items present values greater than .30, which shows that they consistently measure the same dimension or construct (Domínguez-Lara, 2018). Finally, the communalities (h^2) present values greater than .50, which according to Lloret-Segura et al. (2014) reflects an adequate relationship between the items and the underlying factors of the questionnaire, allowing an appropriate representation of the latent structure of the instrument.

Table 6. Descriptive statistical analysis of the Envy Questionnaire (ENV-25) items.

Dimensions	Ítems	Frequency				M	DE	g^1	g^2	h^2	IHC
		1	2	3	4						
Behavioral	1	41.6	30	16	12.4	1.99	1.04	0.69	-0.74	0.63	0.50
	2	45.6	28.4	20.4	5.6	1.86	0.93	0.70	-0.62	0.40	0.59

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4	35.6	30	24.4	10	2.09	1.00	0.43	-0.96	0.78	0.33
7	40.4	24.8	24.4	10.4	2.05	1.03	0.48	-1.05	0.40	0.44
12	51.6	28.8	14.8	4.8	1.73	0.89	0.98	-0.01	0.62	0.52
16	48	31.2	14.4	6.4	1.79	0.92	0.93	-0.10	0.55	0.56
24	46.4	27.6	16.4	9.6	1.89	1	0.80	-0.55	0.63	0.50
26	49.2	29.6	13.6	7.6	1.8	0.95	0.96	-0.11	0.60	0.55
28	54	28.4	6.8	10.8	1.74	0.99	1.21	0.33	0.56	0.57
30	44.8	24.4	17.6	13.2	1.99	1.08	0.66	-0.91	0.73	0.45

Note: Response frequency; 1: never; 2: or almost never; 3: almost always; 4: always; M = mean; SD = standard deviation; g1 = Fisher's coefficient of skewness; g2 = Fisher's coefficient of kurtosis; IHC = corrected homogeneity index; h2 = communality

Table 7 shows the results of the Exploratory Factor Analysis (EFA) of the instrument, using the principal axis factoring method with oblique rotation (promax), based on the theoretical distribution of the items by dimensions. The final model yielded a 3-factor structure with 15 items, which was selected for its best comparative fit. The chi-square value (X^2 = 6.798) was significant and is within the acceptable parameters for a well-adjusted model. Regarding the fit indices, the CFI = 0.947 and the TLI = 0.912 exceed the minimum recommended value of 0.90, indicating a good fit of the model, as proposed by Hu and Bentler (1999) and Brown (2015). Regarding the error rates, the SRMR = 0.075 and RMSEA = 0.075 are below the critical threshold of 0.08, which is considered an acceptable fit according to the criteria established by Hair et al. (2014). These indicators, together, allow us to consider that the obtained model adequately reflects the theoretical structure of the questionnaire.

Table 7. Results of the exploratory factor analysis.

A. GLOBAL

Model	X^2	gl	p	SRMR	RMSEA	CFI	TLI
Three factors (25 ítems)	2.991	300	< .001	0.039	0.054	0.939	0.919
Three factors (15 ítems)	6.798	105	< .001	0.030	0.075	0.947	0.912

Note: X2 = Chi square, df = degrees of freedom, p = significance, SRMR = Standardized Root Mean Square Residual, RMSEA = Squared Error of Approximation, CFI = Comparative Goodness of Fit Index and TLI = Tucker-Lewis Index

Table 8 presents the factor loadings for the three theoretical dimensions of the ENV-25 questionnaire: cognitive, emotional, and behavioral. The factor loadings ranged from 0.877 to 0.942, values considered high, which demonstrates good saturation of the items with respect to their respective factors (Lloret-Segura et al., 2014; Hair et al., 2014). Furthermore, the total explained variance was 40%, exceeding the minimum threshold of 30%, which is considered acceptable for psychological instruments in the validation stage (Ruiz et al., 2010). Regarding the sampling adequacy indicators, the KMO index was 0.918, which is excellent according to Kaiser's

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(1974) classification, while Bartlett's test of sphericity yielded a p-value < .01, indicating that the data are suitable for factor analysis (Ferrando & Anguiano-Carrasco, 2010). On the other hand, the item loadings within each dimension showed values between 0.357 and 0.826, which is considered acceptable for instruments under development, since loadings higher than 0.30 are admissible in exploratory studies (Lloret-Segura et al., 2014).

Table 8. Factor loadings of the three dimensions of the Envy Questionnaire (ENV-25).

Ítems	Cognitive	Emotional	Behavioral
CG15	*0.396*		
CG18	*0.713*		
CG20	*0.733*		
CG22	*0.764*		
CG25	*0.746*		
E6		*0.530*	
E13		*0.773*	
E14		*0.826*	
E17		*0.634*	
E23		*0.566*	
C1			*0.546*
C2			*0.419*
C24			*0.764*
C28			*0.552*
C30			*0.357*

Note: Table prepared by the autor

3.1. Diagram of the factors comprising the instrument

Figure 1 shows the structure of the cognitive, emotional, and behavioral dimensions that make up the Envy Questionnaire (ENV-25). Three factors can be seen, which make up the instrument.

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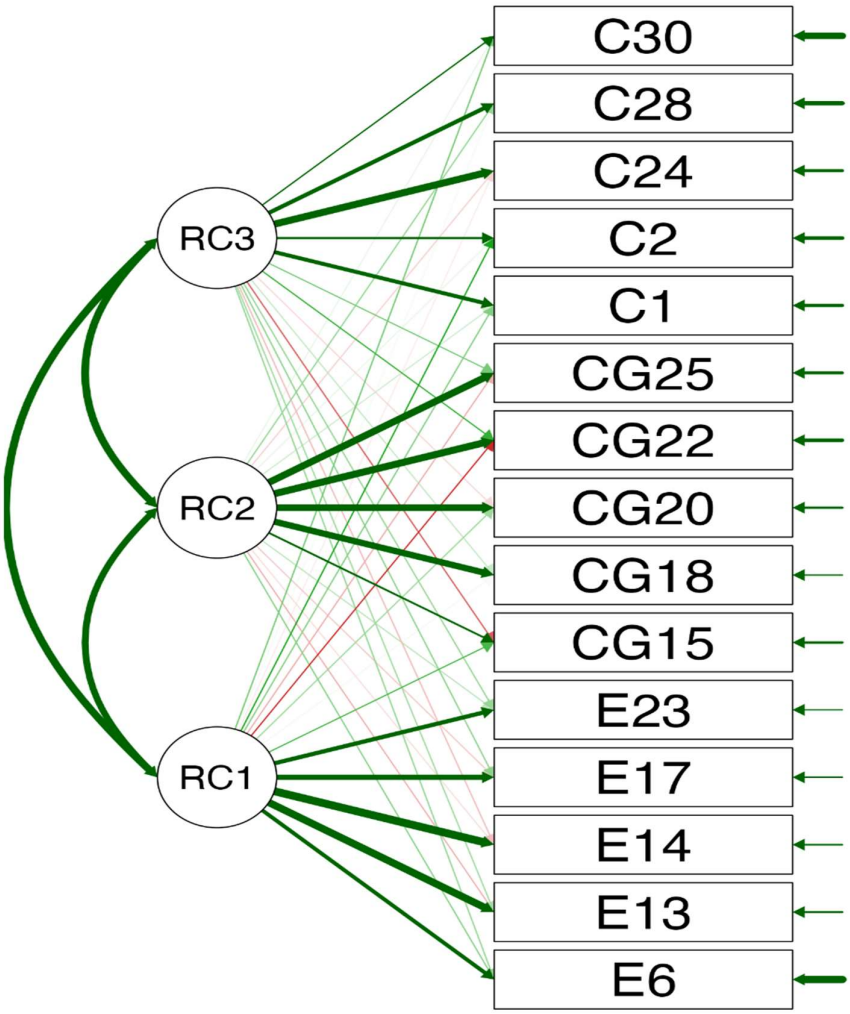

Figure 1. Exploratory factor model of the Envy Questionnaire (ENV-25).

Table 9 presents the Confirmatory Factor Analysis (CFA) of the Envy Questionnaire (ENV-25), which compares two structural models: one unidimensional and the other three-factor, both composed of 15 items. Although both models showed statistical significance in the chi-square test ($p < .001$), the fit indices clearly favored the three-factor model. This model presented a better fit with values of $X^2/df = 3.09$, CFI = 0.927, TLI = 0.912, SRMR = 0.0418 and RMSEA = 0.0685, all within the acceptable ranges established in the literature (Hu & Bentler, 1999; Brown, 2015). In contrast, the unidimensional model showed a slightly poorer fit (CFI = 0.921, TLI = 0.908, RMSEA = 0.070, SRMR = 0.0432), indicating a less robust structure. These findings support the model derived from Exploratory Factor Analysis (EFA), confirming the existence of three distinct dimensions of the envy construct. According to Byrne (2012) and Kline (2016), a multidimensional model that presents better fit indices not only reflects a better theoretical representation of the construct, but also allows for a more precise and differentiated assessment of the variable under study, optimizing its diagnostic and interpretive usefulness.

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Table 9. Confirmatory Factor Analysis of the Envy Questionnaire (ENV-25).

Model	X^2	gl	CFI	TLI	SRMR	RMSEA
One-dimensional (15 ítems)	287	90	0.921	0.908	0.0432	0.07
3 factors (15 ítems)	269	87	0.927	0.912	0.0418	0.0685

Note: X2 = Chi square, df = degrees of freedom, p = significance, SRMR = Standardized Root Mean Square Residual, RMSEA = Squared Error of Approximation, CFI = Comparative Goodness of Fit Index and TLI = Tucker-Lewis Index

Table 10 shows that factor loadings reflect the correlation between items and underlying factors, so their values usually range between -1 and 1. Values above 0.30 are generally considered acceptable to indicate that an item contributes significantly to the dimension it represents, while values above 0.50 are interpreted as strong (Hair, Black, Babin, Anderson, 2014). Extreme values outside this range, such as those close to absolute zero or excessively high, may indicate errors in data extraction or presentation and should be carefully reviewed to ensure the validity of the factor analysis.

Table 10. Factor loadings of the three dimensions of the Envy Questionnaire (ENV-25) *(ENV-25).*

Ítems	*Cognitive*	*Emotional*	*Behavioral*
CG11		*4.067*	*5.39e-4*
CG14		*4.185*	*0.01663*
CG16		*1.307*	*126.915*
CG18		*2.808*	*0.01922*
CG21		*1.037*	*187.103*
E5	*2.057*		*480.367*
E9	*0.156*		*7.27e-8*
E10	*0.144*		*0.04057*
E13	*5.193*		*388.411*
E19	*0.912*		*0.00163*
C1		*54622*	
C2		*21.330*	
C20		*242.411*	
C24		*31.958*	
C25		*0.442*	

Note: Table prepared by the autor.

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3.2. Diagram of the factors comprising the instrument

Figure 2 shows the structure of the cognitive, emotional, and behavioral dimensions that make up the Envy Questionnaire (ENV-25). Three factors can be seen, which make up the instrument.

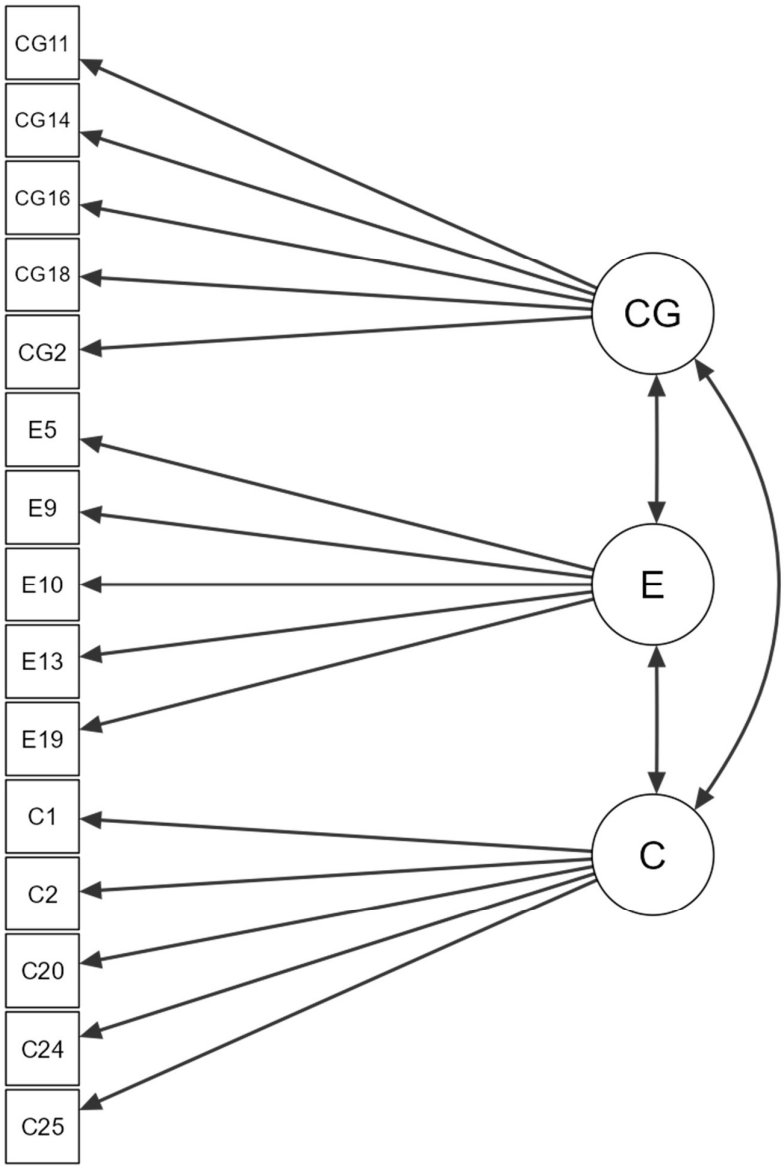

Figure 2. Confirmatory factor model of the Envy Questionnaire (ENV-25).

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Table 11 shows a weak and non-significant correlation between the ENV-25 Questionnaire and the Envy Scale for Adults (CEA), with a Spearman Rho coefficient = 0.017 ($p < .001$), indicating an absence of relevant association between both measures, which calls into question the convergent validity of the ENV-25. According to Campbell and Fiske (1959), convergent validity requires that an instrument shows moderate to strong correlations with other measures that assess similar constructs. Similarly, Marsh, Hau, and Wen (2004) emphasize that low coefficients suggest a lack of concurrent consistency, questioning the validity of the instrument. Furthermore, the minimal effect size ($r^2 = 0.000289$) reinforces the conclusion that the CEA Scale does not significantly predict the results of the ENV-25, which is consistent with Cohen's (1988) recommendations on the interpretation of effect sizes in correlations.

Table 11. Evidence of validity of the envy questionnaire (ENV-25) with another external variable.

		(ENV-25 - CEA)
ENVY (ENVI)	Rho de spearman	0.017
	r^2	0.000289
	Sig. (bilateral)	< .001
	N	250

Note. * p < .05, ** p < .01, *** p < .001

Table 12 presents the reliability coefficients calculated using the Omega coefficient (ω). A value of ω = .905 was obtained for the total scale, while for the cognitive, emotional, and behavioral dimensions the values were ω = .795, ω = .790, and ω = .717, respectively. These values are considered adequate and acceptable, given that they are within the recommended range of .70 to 1.00, indicating good internal consistency of the instrument (Revelle & Zinbarg, 2009). The Omega coefficient is preferred over Cronbach's alpha, as it provides a more precise estimate of reliability in scales with multiple factors and different factor loadings (McNeish, 2018).

Table 12. Internal consistency reliability of the Envy Questionnaire (ENV-25).

Dimensions	**Coefficient ω**	**ítems**
Cognitive	.795	5
Emotional	.790	5
Behavioral	.717	5
Total	.905	15

Note: Reliability; ω: Omega coefficient.

Table 13 presents the general norms of the envy questionnaire (ENV-25), which evaluates the three dimensions of the instrument: cognitive, emotional, and behavioral, with means of 8.86, 9.2, and 8.71, respectively. The interpretation of the levels is established using percentile ranges, where scores between the 25th and 75th percentiles are considered normal or average, while scores above the 80th percentile indicate high levels of the construct, and those below the 25th

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percentile reflect low or sporadic levels (Kaplan & Saccuzzo, 2017). This strategy is common in psychological assessment to categorize the intensity or frequency of thoughts, emotions, and behaviors related to the construct evaluated, facilitating a clear and functional interpretation of the results.

Table 13. Percentile norms of the Envy Questionnaire (ENV-25).

PC	Cognitive	Emotional	Behavioral	Total
100	20	20	20	60
95	15	15	14	43
90	14	14	13	39
85	13	13	12	37
80	12	12	11	35
75	11	11	11	33
70	11	11	10	31
65	10	10	10	30
60	9	10	9	28
55	9	9	9	26
50	8	9	8	25
45	8	8	8	24
40	7	8	8	23
35	7	7	7	22
30	6	7	7	21
25	6	6.25	6	19
20	6	6	6	18
15	5	5	6	17
10	5	5	5	16
5	5	5	5	15
N	446	446	446	446
Average	8.86	9.2	8.71	26.8
Mode	5	5	6	15
DS	3.28	3.35	2.93	8.73
Minimum	5	5	5	15

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Maximum	20	20	20	60

4. Discussion

The purpose of this research was to construct and evaluate the psychometric properties of the Envy Questionnaire (ENV-25) among high school students in the city of Trujillo. The results obtained are discussed below based on the specific objectives set.

The ENV-25 questionnaire was constructed based on a solid theoretical foundation, and its items were organized into three dimensions that adequately reflect the psychological phenomenon of envy. This structure is consistent with theoretical approaches that consider envy as a complex emotion of cognitive, emotional, and behavioral nature (Carrillo et al., 2016; Martínez Mares, 2021). This allowed for the development of a 25-item instrument, evenly distributed. This organization was based on updated conceptual references on the phenomenon of envy in school contexts, allowing for an adequate representation of its multidimensionality. The instrument was designed using a four-point Likert-type scale, which facilitates the differentiation of levels of perceived intensity for each item, conforming to appropriate statistical criteria for psychometric analysis. Dividing the questionnaire into these dimensions allowed for the reflection of the components described by authors such as Festinger (1954), who linked social comparison with the emergence of envy, and Navarro-Carrillo et al. (2017), who highlighted the influence of social and hierarchical factors. In theoretical terms, the instrument allows for the operationalization of a construct that has traditionally been approached from qualitative perspectives, offering a valuable quantitative tool for the study of social emotions in adolescents. In practice, its design favors rapid application in school settings. One potential limitation lies in the initial decision on the number of dimensions without prior qualitative analysis, although this was empirically validated. For future research, we suggest exploring the construct from mixed approaches that allow for the integration of local cultural perceptions. Robust evidence of content validity was obtained through the judgment of a panel of eight expert judges, using Aiken's V coefficient. The results showed values above .80 for most items in terms of clarity, coherence, and relevance (Tables 1 to 3). These findings indicate strong agreement between raters on the relevance of the items to measure the construct, supporting that the questionnaire content adequately reflects the theoretical components of envy in the adolescent population. These results support that the content is appropriate for adolescents, reinforcing the findings of studies such as that of Quinde Saldarriaga (2020), who validated a scale in university students. Unlike that population, the ENV-25 items were semantically and thematically adapted to the school-age group, following the recommendations of Alcázar Durán (2020), who showed how envy in adolescents arises in contexts of academic and social comparison. Theoretically, these results reaffirm that envy can be captured with contextualized items. On a practical level, this validity ensures that the instrument can be used as a basis for psychoeducational interventions in schools. As a limitation, the evaluation focused only on linguistic and theoretical criteria, without initial empirical validation by adolescents. Future studies could consider focus groups with students before administering the questionnaire on a large scale.

The descriptive analysis confirmed the adequate distribution of the items and their internal consistency within each dimension, showing item means ranging from 1.73 to 2.17, with standard deviations between 0.89 and 1.08. The distributions remained within normal parameters, with skewness and kurtosis values between ±1.5 (Tables 4, 5, and 6). Furthermore, the corrected homogeneity indices (CHI) exceeded the minimum cutoff point of .30 for all items, demonstrating that each item contributes to the dimension to which it belongs (Domínguez-Lara, 2018). The communalities (h^2), mostly greater than .50, reflect an adequate proportion of common variance explained by the latent factors. The results showed consistent means, low skewness in the

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distribution of responses, and corrected homogeneity indices (CHI) above .30 (Tables 4–6), in line with the recommendations of Domínguez-Lara (2018). These findings coincide with those of Marín-Cortés et al. (2021), who noted that envy is expressed through different types of comparisons, which explains the variability in responses observed in the ENV-25 items. Theoretically, these patterns support the idea that envy does not manifest itself homogeneously, but rather with varying intensity depending on the context and dimension. In practice, this allows for the detection of individual differences useful for personalized interventions. Although the communality values for some items were low, the overall performance was satisfactory. Future studies suggest reviewing and refining items with communality below .50 to strengthen their contribution to the factor model. Exploratory Factor Analysis (EFA) identified a 15-item three-factor structure that showed good overall fit indices (CFI = 0.947; TLI = 0.912; RMSEA = 0.075; SRMR = 0.030), all within acceptable limits (Hu & Bentler, 1999; Hair et al., 2014). These three dimensions align with the initial theoretical proposal and group items with factor loadings greater than .40 (Table 8), indicating a solid internal organization of the instrument. The model was subsequently confirmed through Confirmatory Factor Analysis (CFA), which compared a one-dimensional structure with a three-factor structure. The three-factor model showed a better fit (CFI = 0.927; TLI = 0.912; RMSEA = 0.0685), outperforming the unidimensional model and confirming the adequacy of the proposed theoretical model (Table 9). Exploratory and confirmatory factor analysis supported a three-factor structure, confirming the validity of the instrument's internal structure. The three-factor solution showed good fit indicators (CFI > .92; RMSEA < .08), comparable to those of similar research such as Ruiz et al. (2010) and Hair et al. (2014), and superior to the unidimensional structures tested. This is consistent with the proposals of Covarrubias et al. (2024), who pointed out that envy has a multifaceted nature that requires a complex structural approach. From a theoretical perspective, an empirical validation of a three-dimensional conception of the construct is provided. In applied terms, it allows for the identification of specific profiles of envy in adolescents, which can guide targeted interventions. A potential limitation was the elimination of items that could have complemented other dimensions; however, this was necessary to achieve greater parsimony in the model. Going forward, we propose testing this structure for factorial invariance in different regions of the country.

Convergent validity was assessed by correlation with the Adult Envy Scale (AES). However, a very low Spearman coefficient was obtained (rho = 0.017; r^2 = 0.0003; p < .001), suggesting that there is no significant relationship between the two scales (Table 11). This lack of association may be attributed to differences in the target population (adolescents vs. adults) or to different theoretical approaches, which underscores the importance of designing specific instruments for each age group. Although studies such as that by Quinde Saldarriaga (2020) used the AES to validate scales in adults, in this study the correlation between the AES-25 and AES was low (rho = 0.017), suggesting that measuring envy in adolescents requires specific instruments. This aligns with what Menzies and Menzies (2020) indicated, who noted that envy in young people is related to different factors, such as social networks or academic competence. Theoretically, this underscores the need to develop measures adapted to the developmental stage. On a practical level, it indicates that the results of the ENV-25 should not be compared with instruments designed for adults. Although this finding can be considered a weakness, it also strengthens the justification for the proposed questionnaire. Future research could use scales validated for adolescents as an alternative external criterion or construct new comparable measures.

The internal consistency of the questionnaire, assessed using the Omega coefficient, reached a value of .905 for the 15 selected items. By dimension, the values were .795 for the cognitive dimension, .790 for the emotional dimension, and .717 for the behavioral dimension (Table 12). These results are considered adequate for initial studies and support the internal consistency of the instrument (Revelle & Zinbarg, 2009; McNeish, 2018). These results improve on those

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reported by Quinde (2020) (ω = .892) and highlight the reliability of the ENV-25 in the school population. From a theoretical perspective, this confirms that the dimensions of the envy construct exhibit internal cohesion. This practically guarantees that the instrument can be safely applied in school psychological assessments. A potential limitation is that other reliability methods, such as test-retest, were not applied; however, the results obtained are robust for a first version of the instrument. It is recommended that other reliability strategies be applied in longitudinal studies.

Finally, percentiles were established to categorize the levels of the construct into low, medium, and high envy (Table 13). Scores between the 25th and 75th percentiles are interpreted as average, while values below the 25th percentile indicate low envy, and those above the 75th percentile indicate high levels. This standard provides a useful framework for the diagnostic and investigative interpretation of the instrument (Kaplan & Saccuzzo, 2017). The means obtained by dimension (between 8.7 and 9.2) allow comparing individuals or groups based on their relative location. These ranges facilitate their use in educational contexts for the detection of cases with high levels of envy, which is important considering studies such as that by Alcázar Durán (2020), which link envy with low self-esteem in adolescents. In theoretical terms, these norms contribute to the standardization of the construct in the Peruvian school population. In practice, they offer school psychologists a quick interpretation tool. One limitation is that the percentiles were constructed using a convenience sample; however, their structure is adequate as a starting point. Validating these cutoff points in more representative and diverse samples is recommended.

5. Conclusions

The psychometric properties of the Envy Questionnaire (ENV-25) were evaluated in a sample of high school students from the city of Trujillo. Strong evidence of validity and reliability was found, indicating that the instrument is suitable for measuring the construct in this population. A specification table was constructed based on a three-dimensional theoretical model, from which a 25-item questionnaire was developed, distributed across the cognitive, emotional, and behavioral dimensions. Subsequently, a group of eight experts evaluated the instrument's content, and using Aiken's V coefficient, a high level of content validity was confirmed, exceeding 80% for all items, which allowed the four-point Likert-type scale to be maintained. A descriptive analysis of the items was performed, which revealed a normal distribution, adequate response dispersion, and good intersubject discrimination, demonstrating appropriate psychometric quality at the item level. Exploratory factor analysis identified a three-factor structure grouping 15 items with factor loadings greater than 0.40. This was subsequently confirmed by confirmatory factor analysis, which yielded satisfactory fit indices. Regarding external validity, a low and nonsignificant correlation was observed with another envy scale, reinforcing the need for specific instruments for adolescents. Regarding reliability, an overall Omega coefficient of 0.905 was obtained, and values above 0.70 were obtained in each of the three dimensions, which supports its internal consistency. Finally, percentile norms were constructed for the interpretation of the results, allowing envy levels to be classified as low, medium, and high within the sample evaluated. Future research recommends applying the instrument to larger and more diverse samples and complementing the validation and reliability methods with longitudinal designs and mixed approaches.

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ANEXOS

Anexo 1: Matriz de consistencia

PROBLEM	OBJECTIVES	INSTRUMENT	VARIABLE	DIMENSIONS	ÍTEMS	METHODOLOGY
What are the psychometric properties of the Envy Questionnaire (ENV-25) for secondary school students in the city of Trujillo in 2025?	To construct and determine the psychometric properties of the Envy Questionnaire (ENV-25) for secondary school students in the city of Trujillo. To construct the specifications table for the Envy Questionnaire (ENV-25). To establish evidence of validity based on the content of the Envy Questionnaire (ENV-25). To establish a descriptive analysis of the items in the Envy Questionnaire (ENV-25). To establish evidence of validity of the internal structure of the Envy Questionnaire (ENV-25). To establish evidence of validity of the Envy Questionnaire (ENV-25) with other external variables. To establish evidence of reliability based on internal consistency of the Envy Questionnaire (ENV-25). To construct the norms and cutoff points for the Envy Questionnaire (ENV-25).	Envy Questionnaire (ENV-25)	Envy	Cognitive Emotional Behavioral	6, 8, 9, 10, 13 3, 4, 5, 7, 11 1, 2, 12, 14, 15	Type: Psychometric Design: Non-experimental-Instrumental Population: Adolescent high school students aged 13 to 17. Sample: 250 people

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Anexo 2: Matriz de operacionalización

VARIABLE	CONCEPTUAL DEFINITION	DIMENSIONS	INDICATORS		ITEMS	MEASUREMENT SCALE
Envy	Leon Festinger (1954), in his theory, proposes that social comparison is the basis of each individual's personal vision. He explains that people have a clear tendency to determine their personal value based on comparisons with their peers. This mechanism is inherent to human beings and is activated naturally. In their search to improve their understanding of themselves and their achievements, individuals tend to compare themselves with those they consider similar or who, in their judgment, possess something they would like to have.	**Cognitive** Refers to the mental processes that accompany the experience of envy, such as recurrent thoughts and comparative perceptions.	Negative thoughts about others.	6	I internally criticize the achievements of those who have more advantages than me.	**Interval** This is the assignment of numbers to objects according to the assigned rules. The way in which numbers are assigned defines the measurement scale model.
				8	It irritates me when others are more successful than me.	
			Unfair conditions.	9	I consider the differences between others' achievements and mine to be unjustified.	
			Constant comparison with others.	10	I pay too much attention to what others have that I desire.	
			Undeserved conditions.	13	I believe it's unfair that some have more opportunities than me.	
		Emotional Involves emotions associated with envy, such as frustration, sadness, hostility, or anger.	Hostility or resentment.	3	I feel anger toward those who achieve things that I also desire.	
				4	I have a hard time accepting the success of people who have more than me.	
			Personal dissatisfaction.	5	I feel dissatisfied with myself when I see others being more successful.	
			Wishing others to fail.	7	Sometimes I hope things don't turn out well for those who are more successful than me.	
			Frustration.	11	I feel helpless when I don't achieve what others have achieved.	
		Behavioral Refers to actions that stem from envy, both proactive and reactive.	Destructive behaviors.	1	I avoid helping people I consider more successful than me.	
			Negative remarks.	2	I frequently point out the flaws of those who are more successful.	
			Adopting behaviors.	12	I copy behaviors from people I admire, even if they don't suit me.	
			Derogatory comments.	14	I speak negatively about other people's achievements in social groups.	
			Seeking self-improvement.	15	I work hard just to surpass someone in particular.	

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Annex 3: Instrument data sheet and protocol

GENERAL DATA

Name of the instrument : Envy Questionnaire (ENV-25)

Authors : Joaquín Cercado Aparicio, Miluska Yamilet Mendoza Plasencia, Aaron Billy Saucedo Delgado, Adeli Anavel Paredes Ulloa

Adviser : Dr. Fernando Antonio Paredes Jara

Year : 2025

Country : Perú

Aim : Construir y determinar las propiedades psicométricas del cuestionario de envidia en estudiantes de secundaria de la ciudad de Trujillo.

GENERAL CHARACTERISTICS

Target population : High school students (13 to 17 years old)

Sample size : 250 estudiantes

Type of sampling : Non-probabilistic for convenience

Estimated application time : 5 a 10 minutos

Response format : 4-point Likert scale

Always (4), Almost always (3), Almost never (2), Never (1)

Number of items : 15 ítems

Dimensions : Cognitive, Emotional, Behavioral

PSYCHOMETRIC PROPERTIES

Content validity : Evaluated by 8 expert judges using Aiken's V coefficient (all items with V > 0.80)

Validity of internal structure : Exploratory Factor Analysis (EFA): 3 factors, 15 items, CFI = 0.947, TLI = 0.912, RMSEA = 0.075, SRMR = 0.030

Confirmatory Factor Analysis (CFA):

Three-factor model: CFI = 0.927, TLI = 0.912, RMSEA = 0.0685, SRMR = 0.0418

Internal consistency (McDonald's Omega):

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Total: ω = 0.905, Cognitive: ω = 0.795, Emotional: ω = 0.790, Behavioral: ω = 0.717

External variable validity: Compared with the Envy Scale for Adults (CEA): Spearman's Rho = 0.017 (not significant), indicating Low convergent validity due to population differences

RULES AND SCORES

Percentile norms: Established for each dimension and for the total.

Interpretation: Percentiles > P80: High envy. Percentiles P25–P75: Medium envy. Percentiles < P25: Low envy.

Ethical Considerations: Informed consent of students and parents.
Approval by ethics committee.
Confidentiality guaranteed.

Envy Questionnaire for Adolescents (ENV-25)

Participant's name:

Age: Sex: Degree: Section:

Mark with an "X" rating each item or statement according to the scale:

Always (S)	Almost always (CS)	Almost never (CN)	Never (N)
4	3	2	1

Statement	S	CS	CN	N
	4	3	2	1
1. I avoid helping people I consider more successful than me.				
2. I frequently point out the flaws of those who are more successful.				
3. I feel anger toward those who achieve things I also desire.				
4. I have a hard time accepting the success of people who have more than me.				
5. I feel dissatisfied with myself when I see others being more successful.				
6. I internally criticize the achievements of those who have more advantages than me.				
7. I sometimes hope that things won't turn out well for those who are more successful than me.				
8. It irritates me that others are more successful than me.				

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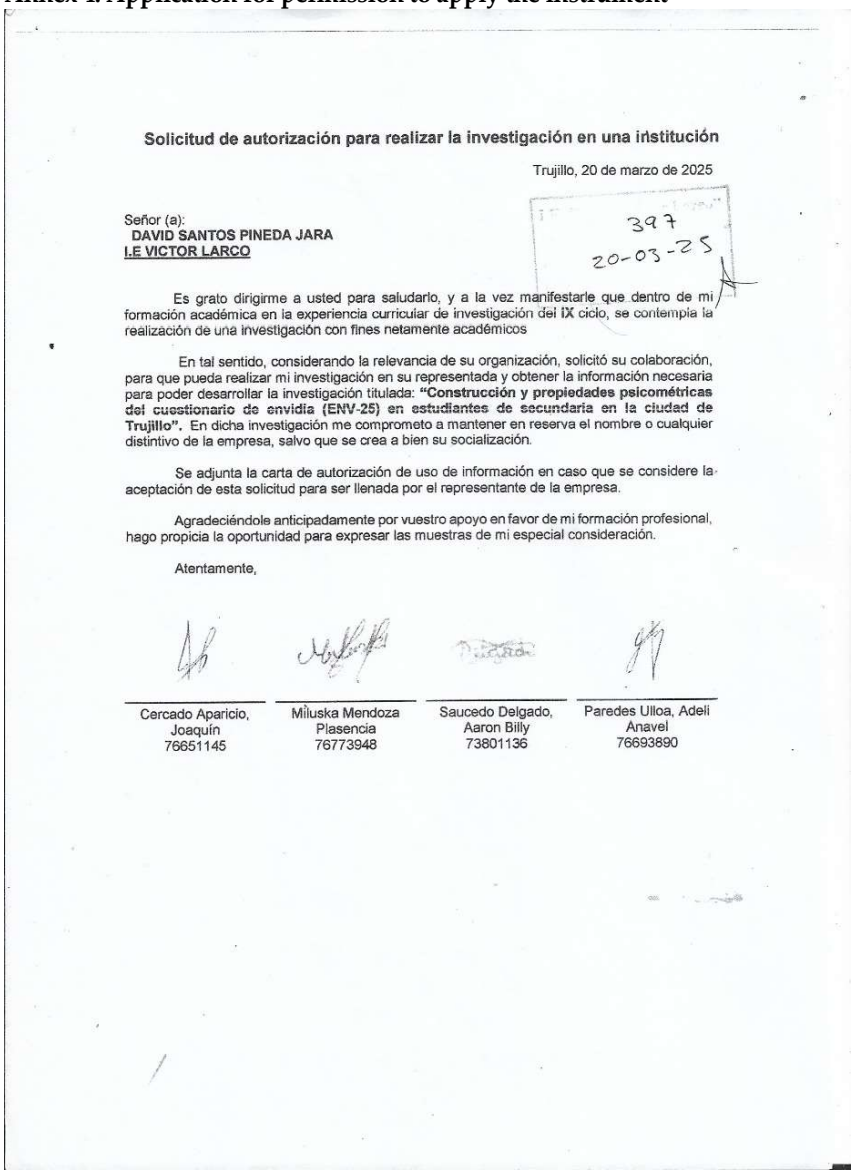
9.	I consider the differences between others' achievements and my own to be unjustified.				
10.	I pay too much attention to what others have that I desire.				
11.	I feel powerless when I don't achieve what others have achieved.				
12.	I copy behaviors from people I admire, even if they don't suit me.				
13.	I think it's unfair that some people have more opportunities than me.				
14.	I speak negatively about other people's achievements in social groups.				
15.	I work hard just to surpass someone in particular.				

Thank you very much for your participation!

Annex 4: Application for permission to apply the instrument



Solicitud de autorización para realizar la investigación en una institución

Trujillo, 20 de marzo de 2025

397
20-03-25

Señor (a):
DAVID SANTOS PINEDA JARA
I.E VICTOR LARCO

Es grato dirigirme a usted para saludarlo, y a la vez manifestarle que dentro de mi formación académica en la experiencia curricular de investigación del IX ciclo, se contempla la realización de una investigación con fines netamente académicos

En tal sentido, considerando la relevancia de su organización, solicitó su colaboración, para que pueda realizar mi investigación en su representada y obtener la información necesaria para poder desarrollar la investigación titulada: **"Construcción y propiedades psicométricas del cuestionario de envidia (ENV-25) en estudiantes de secundaria en la ciudad de Trujillo".** En dicha investigación me comprometo a mantener en reserva el nombre o cualquier distintivo de la empresa, salvo que se crea a bien su socialización.

Se adjunta la carta de autorización de uso de información en caso que se considere la aceptación de esta solicitud para ser llenada por el representante de la empresa.

Agradeciéndole anticipadamente por vuestro apoyo en favor de mi formación profesional, hago propicia la oportunidad para expresar las muestras de mi especial consideración.

Atentamente,

Cercado Aparicio, Joaquín 76651145	Milluska Mendoza Plasencia 76773948	Saucedo Delgado, Aaron Billy 73801136	Paredes Ulloa, Adeli Anavel 76693890

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Annex 5: Informed consent

AUTORIZACIÓN DE USO DE INFORMACIÓN DE INSTITUCIÓN

Yo DAVID SANTOS PINEDA JARA

identificado con DNI 18081485, en mi calidad de DIRECTOR DE LA I.E.

del área de

de la Institución N° 80820 VICTOR LARCO

con R.U.C N° 20481610657, ubicada en la ciudad de VICTOR LARCO H.

OTORGÓ LA AUTORIZACIÓN,

Al señor(a,ita,)

Identificado(s) con DNI N°....., de la Carrera profesional de psicología , para que utilice la siguiente información de la Institución:

.....

.....

.....;

con la finalidad de que pueda desarrollar su Tesis para optar el Título Profesional, ( )Trabajo de investigación para optar al grado de Bachiller, (X)Trabajo de Investigación Formativa, ( ) Trabajo académico, ( ) Otro (especificar).

( ) Mantener en Reserva el nombre o cualquier distintivo de la empresa; o
( ) Mencionar el nombre de la empresa.

Mg. David Santos Pineda Jara
DIRECTOR

Firma y sello del Representante Legal*
DNI: 18081485

El Estudiante declara que los datos emitidos en esta carta y en el Trabajo de Investigación / en la Tesis son auténticos. En caso de comprobarse la falsedad de datos, el Estudiante será sometido al inicio del procedimiento disciplinario correspondiente; asimismo, asumirá toda la responsabilidad ante posibles acciones legales que la empresa, otorgante de información, pueda ejecutar.

Firma del Estudiante
DNI: 76713948

* Este documento es firmado por el representante legal de la institución o a quien este delegue.

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Annex 6: Validation of expert judgesJUEZ N°01:

FICHA DE VALIDACIÓN DE JUICIO DE EXPERTO

Nombre del instrumento	Construcción y propiedades psicométricas del cuestionario de envidia (ENV-25) en estudiantes de secundaria en la ciudad de Trujillo
Nombres y apellidos del experto	Diko Guillermo Mejia
Documento de identidad	76321822
Años de experiencia laboral	20 años
Máximo grado académico	Biologo
Nacionalidad	Peruana
Institución laboral	UCV
Labor que desempeña	Docente
Número telefónico	902 32612
Correo electrónico	dymejia@am.22
Firma	
Fecha	12 / 03 / 25

JUDGE N°02:

FICHA DE VALIDACIÓN DE JUICIO DE EXPERTO

Nombre del instrumento	
Nombres y apellidos del experto	Sandra Elizabeth Fuentes Chávez
Documento de identidad	45649962
Años de experiencia laboral	13 años
Máximo grado académico	Dra.
Nacionalidad	Peruana
Institución laboral	UCV
Labor que desempeña	DTC
Número telefónico	984795263
Correo electrónico	sfuentesc@ucvvirtual.edu.pe
Firma	 Mg. Sandra Fuentes Chávez PSICÓLOGA C.Ps.P. 19924
Fecha	14 / 03 / 2025

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JUDGE N°03:

FICHA DE VALIDACIÓN DE JUICIO DE EXPERTO

Nombre del instrumento	Construcción y propiedades psicométricas del cuestionario de envidia (ENV-25) en estudiantes de secundaria en la ciudad de Trujillo
Nombres y apellidos del experto	Marlon Jhonaton Hurtado Guevara
Documento de identidad	45613323
Años de experiencia laboral	
Máximo grado académico	Licenciado en Psicología.
Nacionalidad	Peruana
Institución laboral	
Labor que desempeña	
Número telefónico	947732318
Correo electrónico	marlonhurtadoguevara@gmail.com
Firma	
Fecha	14/03/2025.

JUDGE N°04:

FICHA DE VALIDACIÓN DE JUICIO DE EXPERTO

Nombre del instrumento	Construcción y propiedades psicométricas del cuestionario de envidia (ENV-25) en estudiantes de secundaria en la ciudad de Trujillo
Nombres y apellidos del experto	Carol del Carmen Sumiko Vásquez Fukumoto
Documento de identidad	18215092
Años de experiencia laboral	15
Máximo grado académico	Magister
Nacionalidad	Peruana
Institución laboral	UCV
Labor que desempeña	Docente
Número telefónico	951889614
Correo electrónico	cvasquezf@ucvvirtual.edu.pe
Firma	
Fecha	14/3/25

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JUDGE N°05:

FICHA DE VALIDACIÓN DE JUICIO DE EXPERTO

Nombre del instrumento	Construcción y propiedades psicométricas del cuestionario de envidia (ENV-25) en estudiantes de secundaria en la ciudad de Trujillo
Nombres y apellidos del experto	Shally Fiorella Vásquez Tuhuio
Documento de identidad	44581679
Años de experiencia laboral	13 a aprox.
Máximo grado académico	Doctora en Psicología
Nacionalidad	Peruana
Institución laboral	Universidad Católica de Trujillo y Universidad C.V.
Labor que desempeña	Docente.
Número telefónico	44581679
Correo electrónico	fiotufi@gmail.com
Firma	Shally Fiorella Vásquez Tuhuio Psicóloga C.Ps.P 21588
Fecha	11 / 03 / 2025

JUDGE N°06:

FICHA DE VALIDACIÓN DE JUICIO DE EXPERTO

Nombre del instrumento	Construcción y propiedades psicométricas del cuestionario de envidia (ENV-25) en estudiantes de secundaria en la ciudad de Trujillo
Nombres y apellidos del experto	Mayra Pilar Del Rocío Cruzado Chaffo
Documento de identidad	C.Ps.P. 10313
Años de experiencia laboral	25 años
Máximo grado académico	Doctorado Completo
Nacionalidad	Peruano
Institución laboral	Universidad César Vallejo
Labor que desempeña	Docente
Número telefónico	
Correo electrónico	mcruzadoch@ucvvirtual.edu.pe
Firma	
Fecha	13 / 03 / 2025

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JUDGE N°07:

FICHA DE VALIDACIÓN DE JUICIO DE EXPERTO

Nombre del instrumento	Construcción y propiedades psicométricas del cuestionario de envidia (ENV-25) en estudiantes de secundaria en la ciudad de Trujillo
Nombres y apellidos del experto	Cynthia Lissette Lamas Villacorta
Documento de identidad	43952895
Años de experiencia laboral	15 años aproximadamente
Máximo grado académico	Magister
Nacionalidad	Peruana
Institución laboral	Universidad César Vallejo / Colegio La Salle
Labor que desempeña	Docente / Psicóloga.
Número telefónico	993571967
Correo electrónico	cylavi@gmail.com
Firma	
Fecha	12 / 03 / 2025

JUDGE N°08:

FICHA DE VALIDACIÓN DE JUICIO DE EXPERTO

Nombre del instrumento	Construcción y propiedades psicométricas del cuestionario de envidia (ENV-25) en estudiantes de secundaria en la ciudad de Trujillo
Nombres y apellidos del experto	Adriana Del Carmen Sanchez Gonzales
Documento de identidad	42606405
Años de experiencia laboral	12 años
Máximo grado académico	Magister
Nacionalidad	Peruana
Institución laboral	Universidad Cesar Vallejo e independiente
Labor que desempeña	Jefa de Practica
Número telefónico	960129129
Correo electrónico	asanchezg@ucv.edu.pe
Firma	Adriana Sánchez Gonzáles Mg. en Psicología N° Reg. 46088
Fecha	13/03/25

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Annex 7: Descriptive analysis of the ítems

Table 13

Descriptive statistical analysis of the Envy Questionnaire (ENV-25) items

Dimensions	Ítems	Frequency				M	DE	g^1	g^2	h^2	IHC
		1	2	3	4						
Cognitive	8	37.2	28.8	24	10	2.07	1.01	0.46	-0.97	0.36	0.58
	10	38	37.2	18.8	6	1.93	0.90	0.65	-0.45	0.57	0.59
	11	38	34.4	16.8	10.8	2	0.99	0.66	-0.63	0.68	0.49
	15	47.2	32.8	12.4	7.6	1.8	0.93	0.97	0.01	0.45	0.63
	18	51.6	22.8	18	7.6	1.82	0.99	0.86	-0.51	0.44	0.66
	20	42.4	29.2	21.6	6.8	1.93	0.95	0.62	-0.74	0.46	0.63
	22	41.2	29.2	18.8	10.8	1.99	1.02	0.64	-0.79	0.53	0.62
	25	39.6	30.8	18.4	11.2	2.01	1.02	0.63	-0.78	0.51	0.65
	27	34	28.8	25.6	11.6	2.15	1.02	0.36	-1.06	0.61	0.59
	29	34.4	30.8	20.4	14.4	2.15	1.05	0.45	-1.02	0.64	0.55

Note: Response frequency; 1: never; 2: or almost never; 3: almost always; 4: always; M = mean; SD = standard deviation; g1 = Fisher's coefficient of skewness; g2 = Fisher's coefficient of kurtosis; IHC = corrected homogeneity index; h2 = communality

Table 13 shows that the response frequency of the items in the ENV-25 questionnaire ranges between 6% and 51.6%, without exceeding the 80% threshold. This indicates that there are no alternatives with excessive predominance, suggesting an adequate distribution of responses (Muñiz, 2018). The means obtained vary between 1.8 and 2.15, while the standard deviations are between 0.93 and 1.05, indicating a low dispersion of the data. Regarding the asymmetry and kurtosis

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values, these fluctuate between 0.90 and -1.06, falling within the acceptable range of ±1.5, which allows us to assume an approximately normal distribution (George & Mallery, 2012). Likewise, the corrected homogeneity index (IHC) exceeds the value of .30, which is considered an adequate indicator of internal consistency and shows that the items measure the same variable (Domínguez-Lara, 2018). On the other hand, with respect to the communalities (h^2), it is observed that some items present values lower than .50, which according to Lloret-Segura et al. (2014) could indicate an insufficient representation of the common factor, affecting the adequacy of the factorial model.

Table 14. Descriptive statistical analysis of the Envy Questionnaire (ENV-25) items

Dimensions	Ítems	Frequency				M	DE	g^1	g^2	h^2	IHC
		1	2	3	4						
Emotional	3	47.6	31.6	13.2	7.6	1.81	0.94	0.95	-0.07	0.61	0.48
	5	42.4	28.8	18.8	10	1.96	1.01	0.67	-0.74	0.39	0.69
	6	50.4	29.6	15.2	4.8	1.74	0.89	0.94	-0.07	0.41	0.63
	9	46.8	31.2	14	8	1.83	0.95	0.91	-0.20	0.50	0.47
	13	42	31.2	13.2	13.6	1.98	1.05	0.75	-0.67	0.39	0.67
	14	37.2	26.8	24	12	2.11	1.04	0.43	-1.07	0.50	0.63
	17	50.8	28.4	14.8	6	1.76	0.92	0.97	-0.09	0.49	0.57
	19	37.2	28	20.8	14	2.12	1.06	0.47	-1.05	0.48	0.65
	21	35.2	26.8	24	14	2.17	1.06	0.37	-1.14	0.45	0.60
	23	38	30	18.4	13.6	2.08	1.05	0.56	-0.93	0.54	0.57

Note: Response frequency; 1: never; 2: or almost never; 3: almost always; 4: always; M = mean; SD = standard deviation; g1 = Fisher's coefficient of skewness; g2 = Fisher's coefficient of kurtosis; IHC = corrected homogeneity index; h2 = communality

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Table 14 shows that the response frequency of the ENV-25 questionnaire items varies between 6% and 50.8%, without exceeding 80%, indicating that no alternatives were selected by a significant majority, allowing for adequate item discrimination (Domínguez-Lara, 2018). The means fluctuate between 1.74 and 2.17, and the standard deviations range between 0.92 and 0.06, suggesting low dispersion in the responses. The skewness and kurtosis values, which range between 0.95 and -1.14, are within the accepted range of ±1.5, a criterion that indicates an approximately normal distribution (George & Mallery, 2012; Villegas, 2014). However, in this specific case, no normality characteristics are evident. On the other hand, the corrected homogeneity index (IHC) exceeds the minimum acceptable value of .30, which suggests adequate internal consistency and that the items measure the same dimension or construct (Domínguez-Lara, 2018). Finally, it is observed that the communalities (h^2) are greater than .50, which, although usually considered adequate, in this case suggests a possible inadequate correlation between the instrument's factors, as warned by Lloret-Segura et al. (2014) in studies on exploratory factor analysis.

Table 15. Descriptive statistical analysis of the Envy Questionnaire (ENV-25) items

Dimensions	Ítems	Frequency				M	DE	g^1	g^2	h^2	IHC
		1	2	3	4						
Behavioral	1	41.6	30	16	12.4	1.99	1.04	0.69	-0.74	0.63	0.50
	2	45.6	28.4	20.4	5.6	1.86	0.93	0.70	-0.62	0.40	0.59
	4	35.6	30	24.4	10	2.09	1.00	0.43	-0.96	0.78	0.33
	7	40.4	24.8	24.4	10.4	2.05	1.03	0.48	-1.05	0.40	0.44
	12	51.6	28.8	14.8	4.8	1.73	0.89	0.98	-0.01	0.62	0.52
	16	48	31.2	14.4	6.4	1.79	0.92	0.93	-0.10	0.55	0.56
	24	46.4	27.6	16.4	9.6	1.89	1	0.80	-0.55	0.63	0.50
	26	49.2	29.6	13.6	7.6	1.8	0.95	0.96	-0.11	0.60	0.55
	28	54	28.4	6.8	10.8	1.74	0.99	1.21	0.33	0.56	0.57

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	30	44.8	24.4	17.6	13.2	1.99	1.08	0.66	-0.91	0.73	0.45

Note: Response frequency; 1: never; 2: or almost never; 3: almost always; 4: always; M = mean; SD = standard deviation; g1 = Fisher's coefficient of skewness; g2 = Fisher's coefficient of kurtosis; IHC = corrected homogeneity index; h2 = communality

Table 15 shows that the response frequency for the items in the ENV-25 questionnaire ranges from 4.8% to 49.2%, without exceeding 80%. This indicates that there are no alternatives chosen by the majority of participants, which favors variability in the responses and avoids centralized tendency (Domínguez-Lara, 2018). The means range between 1.73 and 2.9, while the standard deviations are between 0.92 and 1.08, which denotes low dispersion, that is, the responses are relatively consistent (Villegas, 2014). Regarding asymmetry and kurtosis, the values are between 1.21 and -1.05. These results are within the accepted range of ±1.5 to assume an approximately normal distribution, although certain values close to the extremes could indicate slight deviations from normality (George & Mallery, 2012; Lloret-Segura et al., 2014). Regarding the corrected homogeneity index (IHC), all items present values greater than .30, which shows that they consistently measure the same dimension or construct (Domínguez-Lara, 2018). Finally, the communalities (h^2) present values greater than .50, which according to Lloret-Segura et al. (2014) reflects an adequate relationship between the items and the underlying factors of the questionnaire, allowing an appropriate representation of the latent structure of the instrument.

Annex 8: Qualitative evidence of content validity by judges' criteria of the Envy Questionnaire (ENV-25)

ORIGINAL ITEM	Judges 1 Ps. Mayra del Pilar del Rocio Cruzado Chafo	Judges 2 Dr. Diko Guillermo Mejia	Judges 3 Mg. Marlon Jhonathan Hurtado Guervara	Judges 4 Mg, Cynthia Lisste Lamas Villacorta	Judges 5 Dra. Shally Fiorella Vazquez Tufinio	Judges 6 Mg. Carol del Carmen Sumiko Vazquez Fukunto	Judges 7 Mg. Adriana del Carmen Sanchez Gonzalez	judges 8 Dra. Sandra Elizabeth Fuentes Chavez	REVIEWED ITEMS

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Ítem 1	I constantly reflect on what others have that I don't.	-	-	-	-	-	-	-	-	I constantly reflect on what others have that I don't.
Ítem 2	I find it hard to stop thinking about the differences between my life and others' lives.	-	-	-	-	-	"not giving explanations as to why" is not understood	-	-	I find it hard to stop thinking about the differences between my life and others' lives.
Ítem 3	I spend a lot of time comparing my achievements with those of others.	-	-	-	-	-	-	-	-	I spend a lot of time comparing my achievements with those of others.
Ítem 4	It irritates me when others are more successful than me.	-	-	-	-	-	-	-	-	It irritates me when others are more successful than me.
Ítem 5	I internally criticize the achievements of	-	-	-	-	-	-	-	-	I internally criticize the achievements of those who

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	those who have more advantages than me.								have more advantages than me.
Ítem 6	It bothers me to think that someone deserves more recognition than me.	-	-	-	-	-	-	Evaluating the word makes me uncomfortable	-	It bothers me to think that someone deserves more recognition than me.
Ítem 7	I'm always evaluating how my performance compares to that of the people around me.	-	I always compare my performance with those around me.	-	-	-	-	Evaluating whether the word should always be used	-	I constantly evaluate how my performance compares to that of the people around me.
Ítem 8	I pay too much attention to what others have that I want.	-	-	-	Missing previously agreed upon common time	-	-	Change it to… "nor what happens to both of them"	-	I pay too much attention to what others have that I want.

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Ítem 9	I compare every aspect of my life with the people around me.	-	-	-	-	-	-	-	-	I compare every aspect of my life with the people around me.
Ítem 10	I constantly reflect on what others have that I don't.	-	-	-	-	-	-	-	-	I constantly reflect on what others have that I don't.
Ítem 11	I find it hard to stop thinking about the differences between my life and others' lives.	-	-	-	-	-	-	-	-	I find it hard to stop thinking about the differences between my life and others' lives.
Ítem 12	I spend a lot of time comparing my achievements with those of others.	-	-	-	-	-	-	-	-	I spend a lot of time comparing my achievements with those of others.
Ítem 13	I feel dissatisfied with myself when I see	-	-	-	-	-	-	-	-	I feel dissatisfied with myself when I see others being more successful.

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	others being more successful.								
Ítem 14	It makes me sad to notice that other people have achieved more than me.	-	-	-	-	-	-	-	-	It makes me sad to notice that other people have achieved more than me.
Ítem 15	I get discouraged when I see the achievements of others.	-	-	-	-	-	-	-	-	I get discouraged when I see the achievements of others.
Ítem 16	Sometimes I hope things don't turn out well for those who are more successful than me.	-	-	-	-	-	-	-	-	Sometimes I hope things don't turn out well for those who are more successful than me.
Ítem 17	I would feel better if the people I admire faced difficulties	-	-	It would fit into the previous indicator	-	-	-	-	-	I would feel better if the people I admire faced difficulties in their achievements.

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	in their achievements.								
Ítem 18	I wish that those who surpass me would make visible mistakes.	-	-	-	It eliminates it	-	-	-	-	I wish that those who surpass me would make visible mistakes.
Ítem 19	I feel frustrated when I don't reach the same levels as others.	-	-	-	-	-	-	-		I feel frustrated when I don't reach the same levels as others.
Ítem 20	I resent not having the same opportunities as others.	-	-	It would fit into the previous indicator	-	-	-	-	-	I resent not having the same opportunities as others.
Ítem 21	I feel powerless when I don't achieve what others have achieved.	-	-	-	-	-	-	-	-	I feel powerless when I don't achieve what others have achieved.
Ítem 22	I have a hard time accepting the success of people who	-	-	-	I find it hard to accept success in people.	-	"not giving explanations as to why" is not	-	-	I have a hard time accepting the success of people who have more than me.

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	have more than me.					understood			
Ítem 23	I feel anger toward those who achieve things I also desire.	-	-	-	-	-	-	-	-	I feel anger toward those who achieve things I also desire.
Ítem 24	I get irritated when someone achieves something I deeply desire.	-	-	-	-	-	-	-	-	I get irritated when someone achieves something I deeply desire.
Ítem 25	I prefer not to congratulate people who have achieved more success than me.	-	-	Correct	Removing is more than me	-	-	-	-	I prefer not to congratulate people who have achieved more success than me.
Ítem 26	I minimize the value of other people's achievements in conversations.	-	-	-	-	-	-	-	-	I minimize the value of other people's achievements in conversations.

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Ítem 27	I avoid talking about other people's successes in front of others.	-	-	-	-	-	-	-	-	I avoid talking about other people's successes in front of others.
Ítem 28	I make sarcastic comments about people who excel more than me.	-	-	-	Missing previously agreed upon common time	-	-	Change for… "nor what happens to both of them	-	I make sarcastic comments about people who excel more than me.
Ítem 29	I speak negatively about other people's achievements in social groups.	-	-	-	-	-	-	-	-	I speak negatively about other people's achievements in social groups.
Ítem 30	I downplay the merits of those who have achieved more than me.	-	-	-	-	-	-	-	-	I downplay the merits of those who have achieved more than me.
Ítem 31	I continually analyze how the people around	-	-	-	-	Add: …to be	-	-	-	I continually analyze how the people around me are performing.

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	me are performing.					prepared to criticize.				
Ítem 32	I compare myself to others even in irrelevant situations.	-	-	-	-	-	-	-	-	I compare myself to others even in irrelevant situations.
Ítem 33	I pay excessive attention to the details of others' achievements.	-	-	-	-	-	-	-	-	I pay excessive attention to the details of others' achievements.
Ítem 34	I act in ways that limit others' progress.	-	-	-	-	-	-	-	-	I act in ways that limit others' progress.
Ítem 35	I avoid helping people I consider more successful than me.	-	-	-	-	-	-	-	-	I avoid helping people I consider more successful than me.
Ítem 36	I spread negative comments about someone who has more	-	-	-	-	-	-	-	-	I spread negative comments about someone who has more advantages than me.

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	advantages than me.								
Ítem 37	I work intensely just to surpass someone specific.	-	-	-	-	-	-	-	-	I work intensely just to surpass someone specific.
Ítem 38	I strive to be better than someone in particular, even if it's not important to me.	-	-	-	-	-	-	-	-	I strive to be better than someone in particular, even if it's not important to me.
Ítem 39	My priority is to prove that I can achieve more than other people.	-	-	-	-	-	-	-	-	My priority is to prove that I can achieve more than other people.
Ítem 40	I avoid being around people who are clearly more successful than me.	-	-	-	-	-	-	-	-	I avoid being around people who are clearly more successful than me.

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Ítem 41	I stay away from activities where I know there are people with better abilities.	-	-	Correct	-	-	-	-	-	I stay away from activities where I know there are people with better abilities.
Ítem 42	I prefer not to participate in projects if I know others will have more prominence.	-	-	-	-	-	"not giving explanations as to why" is not understood	-	-	I prefer not to participate in projects if I know others will have more prominence.
Ítem 43	I stay away from groups where there are outstanding people.	-	-	-	-	-	-	-	-	I stay away from groups where there are outstanding people.
Ítem 44	I prefer not to engage socially with those I consider superior.	-	-	-	-	-	-	"	-	I prefer not to engage socially with those I consider superior.
Ítem 45	I close myself off from dialogue	-	-	-	-	-	-	-	-	I close myself off from dialogue when I feel

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	when I feel someone has greater achievements than me.								someone has greater achievements than me.
Ítem 46	I try to replicate the lifestyles of people I consider successful.	-	-	-	-	-	-	-	I try to replicate the lifestyles of people I consider successful.
Ítem 47	I copy behaviors from people I admire, even if they don't suit me.	-	-	-	-	-	-	-	I copy behaviors from people I admire, even if they don't suit me.
Ítem 48	I change my habits to resemble those who are more successful.	-	-	-	Missing previously agreed upon common time	-	-	Change for… "nor what happens to both of them	-	I change my habits to resemble those who are more successful.
Ítem 49	I try to replicate the decisions of successful	-	-	-	-	They eliminate it because it is repeated	-	-	-	I try to replicate the decisions of successful people around me.

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	people around me.								
Ítem 50	I repeat the behavior patterns of those I admire without questioning them.	-	-	-	-	-	-	-	-	I repeat the behavior patterns of those I admire without questioning them.
Ítem 51	I imitate the attitudes of people I consider superior.	-	-	-	They eliminate it because it is repeated	-	-	-	-	I imitate the attitudes of people I consider superior.
Ítem 52	I frequently point out the flaws of those who are more successful.	-	-	-	-	-	-	-	-	I frequently point out the flaws of those who are more successful.
Ítem 53	I make negative comments about the abilities of people I praise.	-	It should be feminine	-	-	-	-	-	-	I make negative comments about the abilities of people I praise.
Ítem 54	I constantly criticize the life	-	-	-	-	-	-	-	-	I constantly criticize the life choices of those I envy.

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	choices of those I envy.								
Ítem 55	I share criticisms of successful people with my friends or acquaintances.	-	-	-	-	-	-	-	-	I share criticisms of successful people with my friends or acquaintances.
Ítem 56	I speak negatively about the performance of others in social gatherings.	-	-	-	-	-	-	-	-	I speak negatively about the performance of others in social gatherings.
Ítem 57	I try to influence others' opinions of someone who surpasses me.	-	-	-	-	-	-	-	-	I try to influence others' opinions of someone who surpasses me.

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Annex 9: Expert judges

JUDGE	NAME	RANK	POSITION
1	Mayra del Pilar del Rocio Cruzado Chafo C.Ps.P. 7350	Master	Professor at César Vallejo University – Trujillo
2	Diko Guillermo Mejia C.Ps.P. 126252	Doctor	Professor at César Vallejo University – Trujillo
3	Marlon Jhonathan Hurtado Guervara C.Ps.P.22723	Master	Professor at César Vallejo University – Trujillo
4	Cynthia Lisste Lamas Villacorta C.ps. P. 23686	Master	Professor at César Vallejo University – Trujillo
5	Shally Fiorella Vazquez Tufinio	Doctor	Professor at César Vallejo University – Trujillo
6	Carol del Carmen Sumiko Vazquez Fukunto	Master	Professor at César Vallejo University – Trujillo
7	Adriana del Carmen Sanchez Gonzalez	Master	Professor at César Vallejo University – Trujillo
8	Sandra Fuentes Chàvez C.Ps.P. 19924	Doctor	Professor at César Vallejo University – Trujillo

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Appendix 9: Syntax of Jamovi tables

Descriptive statistical analysis of the ítems

```
jaspDescriptives::Descriptives(
        version = "0.19.2",
        formula =  ~ CG8 + CG10 + CG11 + CG15 + CG18 + CG20 + CG22 + CG25 + CG27 + CG29 + E3 + E5 + E6 + E9 + E13 + E14 + E17 + E19 + E21 + E23 + C1 + C2 + C4 + C7 + C12 + C16 + C24 + C26 + C28 + C30,
        densityPlotCategoricalType = "prop",
        descriptivesTableTransposed = TRUE,
        frequencyTables = TRUE,
        kurtosis = TRUE,
        maximum = FALSE,
        minimum = FALSE,
        missing = FALSE,
        skewness = TRUE,
        valid = FALSE)
```

Análisis factorial exploratorio trifactorial (15 ítems)

```
jaspFactor::exploratoryFactorAnalysis(
        version = "0.19.2",
        bartlettTest = TRUE,
        factorCountMethod = "manual",
        factoringMethod = "principalAxis",
        fitIndices = TRUE,
        kaiserMeyerOlkinTest = TRUE,
        loadingsDisplayLimit = 0.35,
        manualNumberOfFactors = 3,
        orthogonalSelector = "geominT",
        parallelAnalysisMethod = "factorBased",
        pathDiagram = TRUE,
        variables = ~ CG15 + CG18 + CG20 + CG22 + CG25 + E6 + E13 + E14 + E17 + E23 + C1 + C2 + C24 + C28 + C30)
```

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Análisis factorial exploratorio trifactorial (25 ítems)

```
jaspFactor::exploratoryFactorAnalysis(
        version = "0.19.2",
        bartlettTest = TRUE,
        factorCorrelations = TRUE,
        factorStructure = TRUE,
        fitIndices = TRUE,
        kaiserMeyerOlkinTest = TRUE,
        orthogonalSelector = "varimax",
        pathDiagram = TRUE,
        rotationMethod = "orthogonal",
        variables = ~ CG8 + CG10 + CG11 + CG15 + CG18 + CG20 + CG22 + CG25 + CG27 + E3 + E5 + E9 +
E13 + E14 + E17 + C1 + C2 + C4 + C7 + C12 + C16 + C24 + C26 + C28 + C30)
```

Análisis factorial confirmatorio unifactorial

```
jmv::cfa(
    data = data,
    factors = list(
        list(
            label="TODO",
            vars=c(
                "CG11",
                "CG14",
                "CG16",
                "CG18",
                "CG21",
                "E5",
                "E9",
                "E10",
                "E13",
                "E19",
                "C1",
                "C2",
                "C20",
                "C24",
                "C25"))),
    resCov = NULL,
    stdEst = TRUE,
    fitMeasures = c("cfi", "tli", "rmsea", "srmr"))
```

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Análisis factorial confirmatorio multifactorial

```
jmv::cfa(
    data = data,
    factors = list(
        list(
            label="CG",
            vars=c(
                "CG11",
                "CG14",
                "CG16",
                "CG18",
                "CG21")),
        list(
            label="E",
            vars=c("E5", "E9", "E10", "E13", "E19")),
        list(
            label="C",
            vars=c("C1", "C2", "C20", "C24", "C25"))),
    resCov = NULL,
    stdEst = TRUE,
    fitMeasures = c("cfi", "tli", "rmsea", "srmr"),
    pathDiagram = TRUE,
    mi = TRUE)
```

Confiabilidad por consistencia interna de la dimensión cognitiva

```
jmv::reliability(
    data = data,
    vars = vars(CG11, CG14, CG16, CG18, CG21),
    alphaScale = FALSE,
    omegaScale = TRUE)
```

Confiabilidad por consistencia interna de la dimensión emocional

```
jmv::reliability(
    data = data,
    vars = vars(E5, E9, E10, E13, E19),
    alphaScale = FALSE,
    omegaScale = TRUE)
```

Confiabilidad por consistencia interna de la dimensión conductual

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```
jmv::reliability(
    data = data,
    vars = vars(C1, C2, C20, C24, C25),
    alphaScale = FALSE,
    omegaScale = TRUE)
```

Confiabilidad por consistencia interna total

```
jmv::reliability(
    data = data,
    vars = vars(CG11, CG14, CG16, CG18, CG21, E5, E9, E10, E13, E19, C1, C2, C20, C24, C25),
    alphaScale = FALSE,
    omegaScale = TRUE)
```

Normas percentilares

```
jmv::descriptives(
    data = data,
    vars = vars(Cognitivo, Emocional, Conductual, TOTAL),
    missing = FALSE,
    median = FALSE,
    mode = TRUE,
    pc = TRUE,
    pcValues = "100, 95, 90, 85, 80, 75, 70, 65, 60, 55, 50, 45, 40, 35, 30, 25, 20, 15, 10, 5")
```