

**How to Cite:**

Calizaya-López, J., Ramos-Vargas, L. F., Condori-Mamani, H., Ortiz-Cansaya, S., Acero-Apaza, Y. R., Velazco-Gonzales, A. R., Cuba-Pacheco, L. G., & Ceballos-Bejarano, F. E. (2022). Psychometric properties of the questionnaire on citizen security in the Peruvian general population. *International Journal of Health Sciences*, 6(S8), 5593–5608. Retrieved from <https://sciencescholar.us/journal/index.php/ijhs/article/view/13550>

## **Psychometric properties of the questionnaire on citizen security in the Peruvian general population**

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**Abstract**---The opinion on citizen security service is a little studied and relevant topic, and there are no measurement instruments with evidence of validity and reliability. Therefore, the aim of the study was

to analyze the psychometric properties of the Citizen Security Questionnaire in the general Peruvian population. The sample consisted of 11,274 people aged 15 to 89 years ( $M = 30.93$ ;  $SD = 12.99$ ). A Confirmatory Factor Analysis was applied on the original structure of five dimensions, finding poor adjustment indexes, so that, according to the modification indexes, two modifications were added, and an adequate adjustment of the model was achieved, maintaining the original structure. The internal consistency was high for the dimensions and the total evidence of the stability of the factorial structure was found through the equivalence of the measurement according to sex, age and the condition of having suffered an assault. Robust comparative analyses were applied according to sociodemographic variables, finding statistically significant differences, but with small effect sizes that coincide with previous studies. In general, the citizen security questionnaire presents adequate psychometric properties to assess the opinion on citizen security service in the general Peruvian population.

**Keywords**---citizen security, psychometric properties, validation, measurement invariance, reliability.

## Introduction

Citizen insecurity is a social problem defined as insecurity or fear of crime (Fuentes Díaz & Fini, 2021; Quinteros *et al.*, 2019), or diffuse fear (Chávez & Esparza, 2017). In Peru, the perception of the population insecurity is a primary problem of common interest and without any distinction (Huamani *et al.*, 2019), is so, insecurity is related to indicators such as: violence, criminality, delinquency and social chaos that affects the citizen (Postigo & Contreras, 2019), as well as with greater responses to stress (Aliaga, 2020).

With respect to statistical information in our country according to the National Institute of Statistics and Informatics (INEI, 2020), the following indicators are reported as of January: victimization amounts to 27.2% (victims of some criminal event), the perception of insecurity has 85.9% (population that considers that it will be a victim of a criminal event), and 57.4% perceive that they feel insecure. Among the main types of criminal acts, the following are considered: robbery of money, wallet and cell phone (14.3%), attempted robbery (5.9%) and fraud (4.5%), the main means used for robbery is with a firearm (12.4%), in relation to the reporting of these acts only 17.6% filed a report and the reasons for not reporting were: it is a waste of time (34.8%), they do not know the offender (20.4%), they consider the crime to be of little importance. With respect to policing, the population states that 26.7% is carried out by the Peruvian National Police, for 36.6% by the Serenazgo and for 12.6%, patrolling is integrated (both), specifying that the human resources for policing are insufficient; likewise, the city of Arequipa occupies fourth place nationally as one of the most insecure cities in Peru.

In relation to community participation, Quintero (2020) explains that in citizen insecurity two processes are distinguished, on the one hand, from the prevention approach the Government to implement new forms of police management and territorial security policies requires the intervention of citizens, and on the other hand, the inhabitant perceives that government actions do not bring adequate results so that, given this inability to ensure security, order and peace, it is the citizen himself who ensures his safety (Muggah, 2017).

In this regard, Berti *et al.* (2021) explain that an aspect that complements the described is the organizational logic integrated by the actors involved, where public operators called National Police, Governments (national, regional and local), must provide an adequate service on security to citizens (environment), for this, the decentralized guidelines and executed by the municipalities according to law 27933, it is established that all security policy must be local and all action against it must also be local, taking importance the participation of local government (Appiolaza *et al.*, 2016), but for Fernandez (2019), the concept of security has transcended from the local to the global, but the interest of the present research is more related to the local specifically to a certain territory such as the City of Arequipa.

The current conditions on citizen security (Castillo, 2020), beyond having a National Citizen Security System Law, the scenario that is presented in reality is complex (National Citizen Security Plan, 2019-2023) generating fear, fear of crime in the population (Quinteros *et al.*, 2019), such that, criminality and violence (González Leal *et al.*, 2017) are common social problems evidenced in Latin American societies (More-Valencia *et al.*, 2021; Sánchez-Rentería *et al.*, 2016).

Likewise, an assumption in the perception of citizen insecurity is related to foreign migration due to the events of homicides, kidnappings and robberies that have been reported in recent months through the media (Cuevas-Calderón, 2018), likewise, organized crime is another indicator of consideration, since from the prisons a set of crimes that affect the integrity of the citizenry are handled. Likewise, factors such as drug trafficking, home robbery, domestic violence, kidnappings, the crisis of the judiciary and the prison system are the reality of Peruvian society that generate high levels of insecurity (Campos, 2005; Valdés *et al.*, 2022).

Faced with this reality, little or almost no results are obtained from the application of citizen security policies in the country, in such a way that according to the population's perception of security is negative in relation to whether they feel safe about the service provided by the state apparatus, finding distrust in the police institution, there is no due intervention by public operators (Zenaide, 2022), the human resources allocated for surveillance (Police and Serenazgo) are insufficient and the technology used to monitor public roads does not work properly, all these dimensions influence the decision of victims to report criminal acts when they do not find a solution (Magaña, 2021; Zárate *et al.*, 2013), considering that the service is inadequate and inefficient.

In the study area (city of Arequipa), few relevant studies on citizen security were found, in that sense, the most significant contribution is from Huamani *et al.*

(2019) pointed out that there is a negative perception of citizen security mainly due to the low response capacity of the authorities, little empathy of the police and serenazgo personnel, scarce logistical and human resources to deal with insecurity and the low confidence of the citizenry in timely intervention, in addition, Women are the ones who perceive greater insecurity in the streets compared to men. Likewise, according to the occupation of the citizens, students are the ones who are more exposed to being victims of crime compared to dependent workers, independent workers and housewives, and with respect to age, they specified that the older the citizen is, the lower the perception of security (insecure). In this regard, it is clear that it is necessary to gather empirical information from the general population in order to know the level of citizen insecurity perceived by the population groups in the city of Arequipa.

Finally, with respect to evaluation instruments to measure the level of citizen security in the Peruvian context, it has also been possible to identify few questionnaires that lack the corresponding psychometric analysis for the validity and reliability of the instrument (Muñante, 2020). The instrument developed by Díaz (2021) is based on the SERVQUAL model of service quality taking as reference the dimensions: reliability, responsiveness, trust, empathy and tangible elements, however, it needs the analysis of its psychometric properties, therefore, given the need to collect valid and reliable information in the context, it is appropriate to perform the psychometric analysis of the instrument in question.

Therefore, the objective of the present research focuses on: 1) analyzing the psychometric properties of the Citizen Safety Questionnaire in the general population of Peru; 2) evaluating the measurement invariance of the instrument according to sex, age and the condition of having been assaulted in the last six months; 3) comparing the scores of the instrument according to the sociodemographic variables of the population, and 4) comparing the scores of the instrument according to the sociodemographic variables of the population of the country.

## Method

### Participants

A total of 11,418 people intentionally contacted participated, of whom 144 had to be withdrawn due to missing data, leaving 11,274. Age ranged from 15 to 89 years ( $M = 30.93$ ;  $SD = 12.99$ ). Table 1 describes the study participants.

Table 1. Description of the participants

Variable	<i>f</i>	%
Categorized age		
Less than 20 years old	3189	28.29
From 21 to 40 years old	5656	50.17
From 41 to 60 years old	2066	18.33
Over 61 years old	363	3.22
Sex		
Male	5352	47.47

Female	5922	52.53
Marital status		
Single	7217	64.01
Married	3098	27.48
cohabitant	597	5.30
Divorced	200	1.77
Widower	162	1.44
Occupation		
Housewife	951	8.44
Student	4461	39.57
Independent worker	3592	31.86
Dependent worker	2270	20.13
Degree of instruction		
Primary	482	4.28
Secondary	2166	19.21
technical senior	2138	18.96
Higher University	6488	57.55
Have you suffered any type of crime in the last six months?		
Yes	2898	25.71
Not	8376	74.29

## Instruments

### Citizen Security Questionnaire

It is an instrument of 42 items with five response options (1 - Very little, 2 - Little, 3 - Medium, 4 - Quite a lot and 5 - Very much), which evaluates the opinion of citizens regarding Citizen Safety in their locality (neighborhood). The instrument was elaborated considering the SERVQUAL model of service quality and comprises five dimensions: reliability (items 1 to 8), responsiveness (items 9 to 15), trust (items 16 to 22), empathy (items 23 to 29) and tangible elements (items 30 to 42). The validity of the instrument was evaluated through the source of evidence of content validity with 5 experts, obtaining an Aiken V value of .93, and the reliability was evaluated in a study of 384 Peruvian citizens from the department of Lima ( $\alpha = .949$ ) (Díaz, 2021).

### Procedure

For the application of the instrument, assent and consent were obtained from the adolescents contacted in their schools with the prior authorization of the educational authorities and parents, including older people living in the community, who were contacted in different public places, explaining the objective of the study and obtaining the informed consent of each participant. Subsequently, the instrument was handed out for each person to respond individually. Likewise, the author of the instrument (original version) was contacted by e-mail requesting authorization to use the questionnaire, obtaining the respective authorization.

## Data analysis

The data were digitized in an SPSS version 25 software file (.sav). The analysis was developed with the statistical software R and its development environment RStudio. The following packages were used: haven (Wickham & Miller, 2020) for data import, tidyverse (Wickham *et al.*, 2019) for data manipulation and cleaning, psych (Revelle, 2020) for descriptive analyses, and openxlsx (Schauberger *et al.*, 2020) for table export.

A Confirmatory Factor Analysis was applied on the original five-dimensional structure. The packages used were lavaan (Rosseel, 2012) and semPlot (Epskamp *et al.*, 2019). The polychoric correlation matrix and the Weighted Least Squares Robust Weighted Least Squares (WLSMV) estimation method were used. For the evaluation of the fit indices, the following criteria were taken into account: values  $\geq .90$  and  $\geq .95$  in the CFI and TLI as adequate fit and good fit respectively, values  $\leq .08$  and  $\leq .05$  in the RMSEA as adequate fit and good fit respectively and for the SRMR, values  $\leq .08$  and  $\leq .06$  were considered as good fit and ideal respectively (Keith, 2015). Reliability assessment was calculated using the internal consistency method with the Omega coefficient and its confidence intervals, which was obtained with the MBESS package (Kelley, 2020).

Measurement invariance was assessed using the procedure developed by Wu & Estabrook (2016). As criteria for assessing invariance, sample size (>300) is considered, and the possibility of non-invariance is established when  $\Delta\text{CFI} \geq .010$ ,  $\Delta\text{TLI} \geq .010$ ,  $\Delta\text{SRMR} \geq .030$  and  $\Delta\text{RMSEA} \geq .015$  (Chen, 2007; Svetina *et al.*, 2019). Additionally, comparative analyses were performed between the dimension scores and the overall score according to sociodemographic variables. In the exploratory analysis, outliers cases and the lack of normal distribution were found, so it is decided to apply robust comparisons following the indications of the WRS2 package (Mair & Wilcox, 2020). The value of the robust effect size is presented to evaluate the differences between groups. The following criteria are considered for their interpretation: 0.2 (small effect), 0.5 (medium effect) and 0.8 (large effect) (Mair & Wilcox, 2020).

## Results

Table 2 presents the descriptive statistics of the instrument items. It is observed that the means of the items ranged from 2.14 (item 3) to 3.5 (item 42), the SDs are within the range of 0.86 to 1.4. Regarding skewness and kurtosis, the values are below  $\pm 2$ , suggesting that the items follow relatively normal distributions.

Table 2. Descriptive analysis of items

Item	<i>M</i>	<i>Mdn</i>	<i>SD</i>	<i>Asim</i>	<i>Curt</i>	Item	<i>M</i>	<i>Mdn</i>	<i>SD</i>	<i>Asim</i>	<i>Curt</i>
Item1	2.19	2	0.88	0.38	-0.26	Item22	2.42	2	1.08	0.38	-0.6
Item2	2.22	2	0.89	0.35	-0.24	Item23	2.15	2	0.91	0.37	-0.4
Item3	2.14	2	0.92	0.48	-0.16	Item24	2.22	2	0.86	0.28	-0.45
Item4	2.23	2	0.9	0.27	-0.46	Item25	2.24	2	0.9	0.42	-0.11
Item5	2.22	2	0.93	0.28	-0.55	Item26	2.29	2	0.9	0.27	-0.32
Item6	2.33	2	0.97	0.36	-0.29	Item27	2.27	2	0.88	0.2	-0.5

Item7	2.23	2	0.91	0.33	-0.47	Item28	2.33	2	0.92	0.3	-0.32
Item8	2.28	2	0.94	0.25	-0.62	Item29	2.37	2	0.95	0.29	-0.43
Item9	2.25	2	0.98	0.43	-0.38	Item30	2.23	2	0.92	0.3	-0.54
Item10	2.22	2	0.98	0.42	-0.51	Item31	2.38	2	0.93	0.3	-0.25
Item11	2.26	2	0.93	0.3	-0.41	Item32	2.31	2	0.93	0.37	-0.19
Item12	2.69	3	1.21	0.21	-0.92	Item33	2.4	2	1.14	0.39	-0.76
Item13	2.8	3	1.16	0.08	-0.84	Item34	2.53	2	1.04	0.29	-0.48
Item14	2.36	2	0.98	0.29	-0.47	Item35	2.49	2	1.04	0.31	-0.47
Item15	2.41	2	0.95	0.27	-0.26	Item36	2.52	3	1	0.28	-0.32
Item16	2.6	3	1.18	0.29	-0.79	Item37	2.36	2	1	0.41	-0.32
Item17	2.33	2	0.98	0.29	-0.48	Item38	2.49	2	1	0.32	-0.29
Item18	2.29	2	0.94	0.28	-0.38	Item39	2.46	2	0.98	0.27	-0.35
Item19	2.36	2	0.94	0.26	-0.3	Item40	2.23	2	0.98	0.39	-0.52
Item20	2.16	2	0.92	0.36	-0.51	Item41	2.25	2	1.04	0.56	-0.27
Item21	2.32	2	1.02	0.42	-0.4	Item42	3.5	4	1.4	-0.48	-1.09

The matrix of polychoric correlations between the items was calculated and found to range from .08 to .80. In general, the correlations between the items show low to medium coefficients (mostly).

A Confirmatory Factor Analysis was applied to evaluate the original structure of five dimensions. It was found that the evaluated structure presented inadequate adjustment indexes, so the modification indexes of the model are revised, and the error covariation between item 40 (Do you consider that the number of police officers assigned to your neighborhood is adequate?) and item 41 (Do you consider that the number of police officers assigned to your neighborhood is adequate?) is added. In evaluating this model, it was found that the fit indices improved, but were still not within the adequate category, so an additional modification is added to the model. This modification was to correlate the errors of items 38 (Do you consider that the police station has adequate equipment to deal with crime?) and items 39 (Do you consider that the serenazgo station has adequate equipment to deal with crime?). With this new model, values indicating an adequate fit were achieved. Table 3 shows the fit indices of the three models described above.

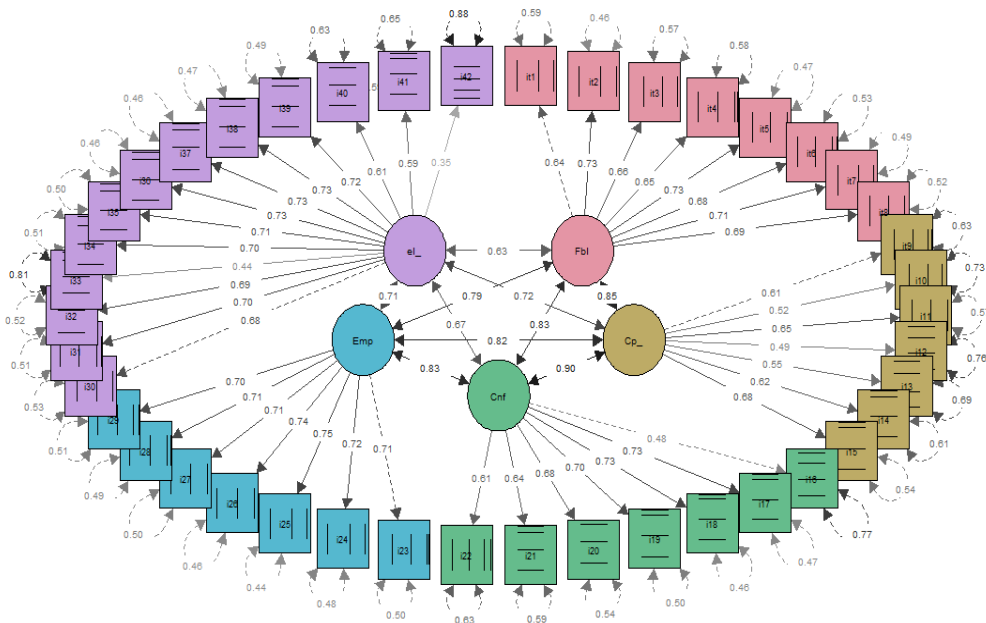
Table 3. Adjustment indices of the evaluated models

Models	$\chi^2$	<i>gl</i>	<i>CFI</i>	<i>TLI</i>	<i>RMSEA</i>	<i>SRMR</i>
Model with original structure	42126.63	809	.887	.880	.067	.050
Model with item40 and item41	35858.93	808	.904	.898	.062	.048
Model with item40 and item41 and item38 and item39	367330.12	861	.916	.911	.058	.045

Note: CFI = Comparative Fit Index, TLI = Tucker Lewis Index, RMSEA = Root Mean Squared Error of Approximation, SRMR = Root Mean Standardized Residual  
\* $p < .001$ .

Figure 1 shows the factor loadings of the final model. It is observed that they ranged from 0.35 (item 42) to 0.75 (item 25). The correlations between the factors are within the range of .627 to .900. Regarding the covariate errors, these were .37 (item40 ~ item41) and .282 (item38 ~ item39).

Figure 1. Factor loads of the final model



The internal consistency of the factors and of the general factor of the final model was evaluated by means of the Omega coefficient. In Factor 1 (Reliability), a coefficient of .85 (95% CI: .84 - .85) was found; in Factor 2 (Responsiveness), a coefficient of .75 (95% CI: .75 - .76) was found; in Factor 3 (Trustworthiness), a coefficient of .79 (95% CI: .79 - .80); in Factor 4 (Empathy), a coefficient of .85 (95% CI: .84 - .85) was found; in Factor 5 (Tangible items), a coefficient of .87 (95% CI: .86 - .87) was found; and finally for the total scale, a coefficient of .95 (95% CI: .94 - .95) was found. According to these results, it can be affirmed that the scores of the instrument present high internal consistency.

Measurement invariance is evaluated for the final model according to three variables: sex, categorized age and having been assaulted in the last 6 months. Table 4 shows the results of the analyses. For the sex variable, the differences were smaller than those established by the literature, with the exception of the strict level of the TLI index (.011); however, since the rest of the differences met the criterion, it is considered that the factorial structure of the instrument shows that the differences invariance of the measurement for males and females. In age, two categories had to be merged, thus remaining as follows: Under 20 years old, 21 to 40 years old and 41 years old and over. No differences were found that exceeded the established limits, that is to say that there is equivalence in the measurement according to age. Finally, in the variable that refers to having



suffered an assault, the differences between the levels were within the indicated limits, so it can be affirmed that there is equivalence in the measurement according to the variable in question.

Table 4. Invariance of the measurement according to sex, categorized age and having been robbed

Variable	Model	$X^2$	<i>gl</i>	<i>CFI</i>	<i>TLI</i>	<i>RMSEA</i>	<i>SRMR</i>	$\Delta$ <i>CFI</i>	$\Delta$ <i>TLI</i>	$\Delta$ <i>RMSEA</i>	$\Delta$ <i>SRMR</i>
Sex	Configuration	33158.4811614.915.909.059				.049					
	Threshold	33551.7191698.914.913.058				.049	.001	.004	-.001		.000
	Metrics	32418.6301735.917.918.056				.049	.003	.005	-.002		.000
	Climb	32220.0821772.918.920.055				.049	.001	.002	-.001		.000
	Strict	28768.8551814.927.931.051				.050	.009	.011	-.004		.001
Age	Configuration	34307.3572421.913.907.059				.053					
	Threshold	34780.6362589.912.912.058				.053	.001	.005	-.002		.000
	Metrics	33384.5712663.916.919.055				.053	.004	.006	-.002		.000
	Climb	33020.0712737.917.922.054				.053	.001	.003	-.001		.000
	Strict	30270.6732821.925.931.051				.056	.008	.009	-.003		.003
Have suffered assault	Configuration	31299.4861614.922.916.057				.049					
	Threshold	31469.9491698.921.920.056				.049	.000	.004	-.001		.000
	Metrics	30292.7761735.925.925.054				.049	.003	.005	-.002		.000
	Climb	30321.7271772.925.927.053				.049	.000	.002	-.001		.000
	Strict	27183.4611814.933.936.050				.051	.008	.010	-.004		.002

Finally, Table 5 presents the descriptive statistics (M and SD) and shows the effect sizes of the comparisons of the dimensions and overall score according to the sociodemographic variables. Since there are variables with outliers and that do not follow normal distributions, it was decided to apply robust statistics. Statistically significant differences are found in almost all comparisons, this is due to the large sample size, however, the effect sizes are small (< .50). In the comparisons according to age, an interesting phenomenon is observed, the older the age, the score on average is reduced in all dimensions and in the General score, this could suggest that, at a younger age, the opinion on Citizen Security is better compared to people with older age. In the comparisons according to sex, it is observed that both groups (males and females) obtained similar scores, suggesting that there are no important differences between them. According to marital status, it is observed that single people have higher average scores than the rest of the groups for all dimensions and overall score, and divorced people have lower average scores in all dimensions and overall score than the rest of the groups, with the exception of dimension 1. According to occupation, it is observed that housewives have lower average scores than the rest of the groups, which means that this group has a more unfavorable opinion of the citizen security service, and students have higher scores in general than the rest of the groups, with the exception of dimension 3, which suggests that this group has a more favorable opinion of citizen security. In the comparisons according to educational level, it is observed that people with higher education presented higher scores on average, which means that they have a more positive opinion of citizen security

than the rest of the groups, while people with primary education have the lowest scores, which could suggest that the opinion of security varies according to the educational level of the person evaluated. Finally, as expected, people who have not been assaulted in the last six months have a more favorable opinion of citizen security than those who have been assaulted.

Table 5. Descriptive statistics and comparisons between the dimensions and general score according to the sociodemographic variables

Variable	Dimension 1			Dimension 2			Dimension 3			Dimension 4			Dimension 5			General		
	M	SD	TE	M	SD	TE	M	SD	TE	M	SD	TE	M	SD	TE	M	SD	TE
Age																		
Under 20	18.60	4.97		17.47	4.24		16.91	4.67		16.43	4.58		32.90	8.42		102.31	22.19	
21 to 40	18.00	4.95	0.24***	17.09	4.61	0.18***	16.63	4.60	0.15**	15.92	4.41	0.15**	32.19	8.17	0.12***	99.83	22.58	0.19***
41 to 60	16.47	5.25		16.24	4.76		15.59	5.06	*	15.02	4.64	*	31.22	8.68		94.55	24.20	
61 and over	16.31	6.30		15.68	5.36		15.48	4.97		14.88	5.36		30.52	9.29		92.88	27.24	
Sex																		
Male	17.82	5.01		16.87	4.55	-0.06**	16.49	4.73	0.00	15.91	4.48	0.04*	32.04	8.42	-0.01	99.13	22.83	0.00
Female	17.84	5.22	0.00	17.10	4.62		16.47	4.76		15.83	4.63		32.27	8.37		99.53	23.37	
Marital status																		
Single	18.23	4.95		17.22	4.43		16.73	4.65		16.13	4.42		32.53	8.22		100.84	22.22	
Married	17.37	5.25		16.68	4.72		16.14	4.86		15.60	4.66		31.50	8.51		97.30	23.92	
Cohabitant	16.20	5.27	0.2***	16.45	4.89	0.17***	15.74	4.84	0.17**	14.67	4.56	0.18**	32.07	8.70	0.15***	95.13	24.15	0.19***
Divorced	16.75	5.38		15.46	5.25		15.46	4.86		14.52	5.22		30.45	9.23		92.63	25.97	
Widower	16.33	6.62		16.98	5.87		16.08	5.61		15.22	6.36		30.80	10.43		95.41	31.21	
Occupation																		
Housewife	16.65	5.17		16.15	4.32		15.44	4.70		15.11	4.51		31.42	8.37		94.75	22.33	
Student	18.55	4.81	0.18***	17.41	4.36	0.15***	16.78	4.55	0.16**	16.31	4.34	0.13**	32.91	8.24	0.11***	101.96	21.71	0.17***
Independent	17.13	5.44		16.47	4.80		16.12	4.88	*	15.35	4.72	*	31.56	8.53		96.64	24.39	
Dependent	18.04	4.92		17.34	4.65		16.90	4.83		16.15	4.65		31.96	8.38		100.38	23.30	
Instruction																		
Primary	14.44	5.54		13.92	5.03		13.74	4.95		13.87	4.99		29.94	8.61		85.91	24.98	
Secondary	17.54	5.26	0.36***	16.46	4.59	0.34***	16.53	4.97	0.31**	15.71	4.60	0.23**	32.34	8.58	0.17***	98.59	24.06	0.3***
Technique	17.46	5.13		16.68	4.57		15.99	4.80	*	15.42	4.58	*	30.86	8.14		96.40	22.75	
Higher	18.31	4.92		17.50	4.44		16.83	4.55		16.22	4.46		32.69	8.33		101.55	22.30	
Have you suffered any type of crime in the last six months?																		
Yes	17.24	5.10	-0.11***	16.51	4.68	-0.11***	15.91	5.03	-0.11	14.94	4.54	-0.23	31.15	8.66	-0.15***	95.76	23.95	-0.13**
Not	18.04	5.11		17.16	4.54		16.68	4.63		16.19	4.53		32.51	8.27		100.58	22.69	

Note: \*. p < .05; \*\*. p < .01; \*\*\*. p < .001

## Discussion

The aim of the present study was to analyze the psychometric properties of the Díaz (2021) Citizen Safety Questionnaire. The most important finding consisted of the confirmation of the original five-dimensional structure by means of CFA and evidenced by adequate fit indices to the model. It was also found that the scores presented high internal consistency. These results provide important evidence of the psychometric quality of the instrument in the general population.

The internal structure of the construct was analyzed by means of the CFA, finding an adequate fit of the model with the data. In the literature review, no psychometric studies of the instrument have been found, so the present article contributes to the process of accumulating evidence on its validity according to current measurement standards (American Educational Research Association *et al.*, 2018). It is worth highlighting the inclusion of covariate errors between the items, these had similar contents, that is, they refer to the same topics, but one alludes to the police service and the other to the serenazgo service. This result agrees with the findings of Fernández & Grijalva (2012), who constructed an

instrument on trust in the police and studied its structure, finding a two-factor model: Efficiency and Legitimacy, which resemble dimensions 1 and 2 (Reliability and Responsiveness) and dimension 3 and 4 (Trust and Empathy), which showed high correlations between dimensions (.85 and .83 respectively).

The correlations between factors could suggest about the possibility of developing second-order models for the construct, so the reader is encouraged to evaluate such hypothesis in future studies. With respect to internal consistency, Omega coefficients greater than .75 were found for the five dimensions and .95 for the total number of items. This result coincides with that reported by (Díaz, 2021), who indicates a value of .949. The use of the Omega coefficient is conducive in this case, since several of the items have very similar contents and it is a large number of items (42 items), which could inflate the Alpha coefficient, while the Omega can better control this bias in the coefficient (Ventura-León & Caycho-Rodríguez, 2017).

The equivalence in measurement (invariance) of the model obtained from the AFC was evaluated according to the sociodemographic variables: gender, categorized age and having suffered an assault in the last six months. In the three analyses developed, evidence has been found that the instrument shows measurement invariance, that is, that the five-factor structure is similar for men and women, people of different ages and if the person being evaluated has suffered an assault. Understanding that the construct evaluated studies the opinion of the Citizen Security service offered, these results provide relevant evidence on its use in different groups and the stability of the factorial structure of the construct. Of special interest are the results of factorial invariance according to the condition of having been assaulted or not in recent months, since it implies that the structure of the instrument is not affected by personal experiences with citizen insecurity on the part of the respondent. However, the fact that no differences were found in the factorial structure in these two groups remains a doubt, possibly due to other variables, such as, for example: distrust of the citizen security service, hopelessness about the crime situation, quality of service, etc. Readers are encouraged to include contextual variables in future psychometric studies to corroborate the stability of the factorial structure presented.

In the comparisons of the dimensions and overall score according to sociodemographic variables, interesting results were found. In general, statistically significant differences were found but with small effect sizes, which coincides with the comparisons developed in the study by Huamani *et al.* (2019). Comparisons according to age show that younger people have a more positive opinion of the citizen security service compared to older people. Huamani *et al.* (2019) found that "Age correlates inversely and lowly with the dimensions and variable studied, that is, participants with younger age have a better perception of citizen security as opposed to participants with older age" (p. 95). This could be due to the formation of beliefs, true or not, about the service provided by the police and serenazgo. An older person has already had experiences, satisfactory or unsatisfactory, in receiving citizen security service, while a younger person (under 20 years of age) has not yet had such experiences. This added to a sense of institutional crisis (Campos, 2005; Huamani *et al.*, 2019; Valdés *et al.*, 2022; Zenaide, 2022), can dent the image of the institutions in charge of citizen security

and decrease the positive opinions of the population. In relation to the comparisons by sex, the effect sizes were very small, which implies that both sexes have a similar opinion about the citizen security service received. It is important to note that different studies have found differences according to sex. In this regard, Méndez *et al.* (2021) found that the greater use of police force tends to be greater in men than in women, concluding that there are ideological factors and psychosocial variables (gender roles) in the perception of police excesses. Aliaga (2020) found that responses to citizen security are different in men and women, with men being more prone to avoidance and women to greater affective responses and physiological activation. On the other hand, Huamani *et al.* (2019) found that women are those who perceive greater insecurity in the streets compared to men. The fact that no significant differences were found between these groups could be due to the construct evaluated, which focuses on the service received and not on attitudes towards it.

It is curious what was found in the comparisons according to marital status, where single people presented higher scores than the rest of the groups, while divorced people presented lower scores in almost all dimensions and in the overall score. This result partially coincides with that found by Huamani *et al.* (2019), who found that singles presented better opinion than the rest of the groups. This could be due to having family burden. Commonly, divorced people have children, for whom they must provide, so they give greater importance to their income and resources, which indirectly influences the attention to events or situations that may affect them, while singles may not have such burden, so they have more flexibility with their income and resources and this could indirectly affect a more favorable position on the citizen security service. However, when looking at married people, it is found that they are a more heterogeneous group, with more variations in comparison to the rest of the groups, but with a more favorable opinion towards the citizen security service. This hypothesis should be corroborated in future studies to identify whether these differences are the product of chance or have an explanation based on evidence and theory.

In the comparisons according to educational level, it was found that people with a lower educational level (primary) had worse opinions compared to the rest of the groups, while people with a higher educational level (Superior) had higher scores (positive opinions) than the rest of the groups, a result similar to that found by Huamani *et al.* (2019). This could be due to the context conditions of the evaluatee. It is known that the degrees of education are associated with socioeconomic level (Vera-Romero & Vera-Romero, 2013), that is, the higher the degree of education the higher the socioeconomic level, which implies better conditions for living, safer districts, more organized municipalities, so that people with higher degrees of education may have a more favorable opinion of the citizen security service compared to people with lower degrees of education. In the comparisons according to the condition of having suffered an assault in the last six months, it is observed that the effect sizes are very small, so it could be said that there are no important differences between the groups. This result is in agreement with what was found when analyzing measurement invariance; possibly there are other variables that are operating to avoid finding differences between these groups.

Among the limitations of the study, the following can be mentioned: 1) the sampling, despite working with a large sample, was by convenience, which could affect the generalization of the results; however, it is considered that the study has population validity due to the concordance found between the theoretical model and the data, and the sample size; in addition, the generalization of results to other Peruvian and even Latin American contexts could be considered; 2) the instrument evaluated does not have studies published in peer-reviewed journals. The instrument was obtained through e-mail communication and a web page of the author. Despite this, evidence has been found on the adequacy of the original structure and high reliability; 3) The studies reviewed focus more on attitudes (cognitions, emotions and behaviors) towards specific institutions in charge of citizen security (police), while the study presented addresses the opinion on the service received, so there are relevant theoretical differences to develop the discussion of results.

Based on the results obtained, it can be affirmed that the Citizen Safety Questionnaire by Díaz (2021) presents evidence of validity based on its five-dimensional structure and high internal consistency. In addition, it has been established that the structure has invariance of the measurement according to sex, age and the condition of having suffered an assault. In conclusion, the instrument evaluated has adequate psychometric properties to evaluate the opinion on citizen security service in the general population.

### **Conflict of interest**

The authors of this article declare that they have no conflicts of interest.

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