

# Psychometric Properties of the Deviant Behavior Variety Scale in Young Spanish Adults

Aitana Gomis-Pomares<sup>1</sup>, Lidón Villanueva<sup>1</sup>, and Miguel Basto-Pereira<sup>2</sup>

<sup>1</sup> Universitat Jaume I and <sup>2</sup> William James Center for Research, ISPA

## Abstract

**Background:** Deviant behavior is a psychosocial problem that has attracted great interest from both the scientific community and society at large due to its prevalence and negative consequences. Valid, reliable measures of deviant behaviors are critical for providing a better understanding of their causes and outcomes. The central aim of the present study was to assess the psychometric properties of the Deviant Behavior Variety Scale (DBVS) in a sample of young Spanish adults. **Method:** Participants comprised 490 young adults (62.4% female) aged between 18 and 20 years old ( $M=18.90$ ;  $SD=.77$ ). **Results:** Confirmatory factor analyses yielded a single-factor structure model of DBVS showing, in general, satisfactory or good fit indexes. Moreover, convergent validity was confirmed by assessing correlations between deviant behavior ( $r=.77$ ) and psychopathy ( $r=.45$ ), showing that both variables were correlated. Intraclass reliability (ICC) results demonstrated the test-retest reliability of the DBVS, and Kuder-Richardson 20 ( $KR-20=.79$ ) showed appropriate internal item consistency. **Conclusions:** This study found that the Spanish version of DBVS presented promising psychometric properties supporting it is a reliable, valid measure for assessing young adults, involvement in deviant behaviors.

**Keywords:** Deviant behavior, validity, reliability, young adults.

## Resumen

**Propiedades Psicométricas de la Escala de Conducta Transgresora en Adultos Jóvenes Españoles. Antecedentes:** la conducta transgresora es un problema psicosocial que ha despertado un gran interés tanto en la comunidad científica como en la sociedad en general dada la alta prevalencia y sus consecuencias negativas. Así pues, medir de forma válida y fiable la conducta transgresora es fundamental para proporcionar una mejor comprensión de sus causas y consecuencias. El presente estudio evaluó las propiedades psicométricas de la Deviant Behavior Variety Scale (DBVS) en una muestra de adultos jóvenes españoles. **Método:** los participantes fueron 490 adultos jóvenes (62,4% mujeres) con edades entre los 18 y 20 años ( $M=18.90$ ;  $SD=.77$ ). **Resultados:** el análisis factorial confirmatorio evidenció un modelo de estructura unifactorial de la DBVS que mostró índices de ajuste entre satisfactorios y buenos. Se confirmó la validez convergente al evaluar las correlaciones entre la conducta antisocial ( $r=.77$ ) y la psicopatía ( $r=.45$ ). Los resultados de la fiabilidad intraclass (ICC) evidenciaron la fiabilidad test-retest del DBVS, y el Kuder-Richardson 20 ( $KR-20=.79$ ) mostró una consistencia interna adecuada de los ítems. **Conclusiones:** este estudio evidencia que la versión española del DBVS presenta propiedades psicométricas prometedoras, mostrando que es una medida fiable y válida para evaluar la conducta transgresora en adultos jóvenes.

**Palabras clave:** conducta transgresora, validez, fiabilidad, jóvenes adultos.

Deviant behavior is broadly defined as “any behavior that deviates significantly from what is considered appropriate or typical for a social group” (Pérez-Acosta, 2008); in other words, they are actions that violate societal norms and others’ personal or property rights (World Health Organization, 2018). Deviant behavior usually begins in early adolescence and is related to higher likelihood of both criminal justice involvement and premature death (Border et al., 2018).

In the last few years, some meta-analyses have found solid associations between different deviant behaviors and a wide range of negative outcomes such as alcoholism and drug consumption

(Dube et al., 2003; Valdebenito et al., 2015), psychiatric disorders (Hughes et al., 2017), adjustment difficulties at work and in the family, and interpersonal problems (Berry et al., 2007). Furthermore, empirical research has also shown that deviant behavior is positively correlated with variables such as official crime records (Farrington et al., 2013), low self-control (Vazsonyi et al., 2006), substance and alcohol abuse (Mason et al., 2007) or psychological distress (Wiesner et al., 2005).

Moreover, psychopathic traits have also been linked to deviant behavior, which can seriously interfere with the psychosocial development in the different evolutionary stages (Fanti et al., 2021; Frick & White, 2008). Thus, accurately measuring juvenile deviance is one of the central methodological issues in criminology and forensic psychology for the serious personal, economic, and social consequences that span national boundaries.

In this vein, questionnaires of self-report delinquency have several benefits. One of these plays an important role in helping

to unveil the prevalence and incidence of deviance beyond official data, as well as comparing deviant behavior rates among countries using the same criteria (Pechorro et al., 2014). Regarding this, the International Self-Report Delinquency (ISRSD) study (Enzmann et al., 2010) found that between 13.8% and 40.1% of youth around the world have committed at least one delinquent act. In the case of European countries, the prevalence ranged between 29.3% (western Europe), and 20.6% (northern Europe). Focusing on Mediterranean countries, such as Spain, Portugal, or Italy, the rate ranged from 25.6% to 14.5% (Enzmann et al., 2010).

In the gender and age debate, most studies have found significant differences with higher frequency of deviant behavior and delinquency in males and in early adulthood compared to the female sex and to other ages (Boniface & Bekom, 2021; Gomis-Pomares & Villanueva, 2020; Mezquita et al., 2021; Sanabria & Uribe, 2009; Stolzenberg & D'Alessio, 2008). In this regard, various international studies addressing the prevalence of self-reported deviance across the world have suggested that boys showed more deviant behaviors than girls, and that offending behavior was positively related to socially constructed masculinity (e.g., Ma, 2005). Moreover, when age is related to delinquency, it is observed that it increases during adolescence, peaks in early adulthood, and then declines (Stolzenberg & D'Alessio, 2008). For instance, lower scores are observed during preadolescence and early adolescence, showing higher scores at 16-17 years of age that increase even more at 18 years of age (Rechea, 2008; Sanabria & Uribe, 2009).

In Spain, where this study takes place, according to the Spanish National Statistics Institute (INE, 2020), in 2019, about 286,931 adults and 14,112 minors were convicted of committing crimes. Of adult convicts, 79.36% were males, and for minors, the percentage was quite similar, showing a higher prevalence of convicted males (79.03%). In addition, to know how deviance occurs and differs across cultures is crucial to understand how each person interacts in his or her context. In this line of research, some studies have found a higher prevalence of deviant behavior in individualistic countries (Thalmayer & Rossier, 2019), while others have found it to be higher in collectivistic ones (such as Spain) (Mezquita et al., 2021). Therefore, the subtleties that the cultural context may add to the issue of deviant behavior are worth analyzing. However, most of the studies included were from the USA (e.g., Volkert et al., 2018), suggesting the need to perform similar epidemiologic studies in other countries around the world.

Self-reported delinquency questionnaires were developed to assess antisocial behavior, which has been traditionally assessed either by official records or by self-reported measures. Although both measures have positive and negative aspects, self-report measures have been shown to provide better estimates of the prevalence and frequency of offending behavior (Gomes et al., 2019; Loeber et al., 2015). Moreover, self-report measures provide extremely important information that facilitates early intervention that would be impossible to obtain through official records (Farrington et al., 2014). Furthermore, several studies have accounted for the validity of self-reports becoming the most widely used technique in psychological research to measure delinquent and deviant behavior (Jolliffe et al., 2003; Webb et al., 2006).

Self-report questionnaires have the advantage of detecting a vast array of behaviors in terms of presence, duration, variety, frequency, and seriousness, but they are less reliable due to its retrospective design, which may involve some difficulties with remembering

events that happened in the past. Despite this disadvantage, a set of self-reported questionnaires evaluating deviance and crime, particularly for the last 12 months, has been shown to be valid and reliable in different countries from the Anglosphere and beyond around the world (Sanches et al., 2016; Webb et al., 2006).

One of the most important studies in this field was conducted by Elliott and Ageton (1980), who created and tested a scale for the National Youth Survey (NYS), a longitudinal study of delinquent behavior among American youth that evaluated a broad range of delinquent acts and drug consumption habits. After Elliott and Ageton (1980), diverse self-report questionnaires evaluating deviance and delinquency have been examined in terms of their psychometric properties such as the AHSRD (Add Health Self-Report Delinquency), designed for the National Longitudinal Study of Adolescent Health, which assessed delinquency in the previous 12 months, including items evaluating violent behavior and non-violent delinquency. In addition, different studies have found appropriate psychometric properties of the AHSRD questionnaire (e.g., Cota-Robles et al., 2002; Vazsonyi et al., 2006). Along the same lines, the D-CRIM questionnaire (Basto-Pereira et al., 2015), which evaluates the presence of criminal behaviors both in the last year and during one's lifetime, is also an example of a self-report questionnaire with good psychometric properties for the adult Portuguese population.

Some studies have demonstrated that variety scales are better than other types of scales regarding their psychometric properties, presenting higher group differences, higher stability over time, and higher internal consistency (Bendixen et al., 2003). Furthermore, as variety scales usually present a simpler response format, this makes participants answer in a quicker way, and prevents the risk of guessing (Bendixen et al., 2003).

In this regard, a study conducted by Sanches and colleagues (2016) examined the psychometric properties of the Deviant Behavior Variety Scale (DBVS) among a Portuguese-speaking sample. The results obtained supported a one-factor simple and short scale, being reliable measure to evaluate adolescents' involvement in deviant activities. The psychometric properties of this scale will be tested in the current study.

Therefore, the current study assesses, for the first time, the psychometric properties of the DBVS among a Spanish-speaking sample of young adults. It was predicted that the DBVS would: (1) confirm the presumed one-factor structure; (2) show convergent validity with measures of deviant behavior over life and psychopathy; (3) display known-group validity in deviant behavior involvement, with men committing more offences; (4) show an adequate internal consistency measure by Kuder-Richardson 20 (KR20); and (5) present good test-retest reliability of the DBVS over time.

## Method

### *Participants*

The collected data of this study is part of the International Study of Pro/antisocial Behavior in Young Adults (SOCIALDEVIANCE1820 Research Project in Spain) (see Basto-Pereira et al., 2020). It was collected from different contexts such as universities, professional schools, adult education centers, and leisure centers using convenience and snowball sampling methods. The total study population consisted of 490 young adults from

the Valencian Community in Spain, with ages ranging from 18 to 20 years old ( $M = 18.90$ ;  $SD = .77$ ). Of the total participants, 37.6% were males and 62.4% were females. The vast majority were of Spanish origin, and only a small portion belonged to an ethnic minority (7.3%). Regarding school attendance, 4.3% of the participants had studied for between 8 and 10 school years, 42.7% between 11 and 12 years and 53% had completed between 12 and 14 academic years.

### Instruments

*Deviant Behavior Variety Scale (DBVS)* (Sanches et al., 2016) is a self-report scale that includes both illegal behavior, like driving a motorbike or a car without having a driver's license, and rule-breaking behavior that is not illegal, such as lying to adults or truancy without parental consent. It consists of 19 items answered using a dichotomous scale (*yes/no*) about whether the participants performed any of the 19 deviant behaviors during the previous year (12-month DBV). The overall score for deviant behaviors is obtained by the sum up of affirmative answers. In addition, a question was added, and participants were also asked to report the number of deviant behaviors they had carried out throughout their entire life (Lifelong DBV). As previously addressed, the Portuguese version of this scale showed appropriate psychometric characteristics (see Sanches et al., 2016).

*Youth Psychopathic Traits: Short version (YPI-S)* is an 18-item measure that assesses psychopathic features that map onto three domains: interpersonal (e.g., "I find it easy to manipulate people"), affective (e.g., "I think crying is a sign of weakness, even if no one is watching"), and behavioral (e.g., "I get bored quickly if I have to do the same thing over and over again"). The response format uses a 4-point Likert-type scale. The scale showed good psychometric properties in the original study and subsequent studies across Anglo-Saxon and Spanish samples of adolescents (e.g., Orue & Andershed, 2015). In the current sample of young adults, CFA analysis revealed a second order model with a good fit for the three theorized dimensions (interpersonal, affective, and behavioral). Across items, the loadings were always higher than .40, and the general indicators were appropriate: CFA = .97; TLI = .95 RMSEA = .06;  $\chi^2_{sb}/df = 2.9$ ,  $p < 0.001$ ). The internal consistency in the current sample was acceptable ( $\alpha = .80$ ).

### Procedure

The questionnaires were self-reported, and they were completed on paper and pencil, always in the presence of the researchers who beforehand had explained the purpose of the study. The translation process was the following one (Hernández et al., 2020). First, the permission from the author/s of the instruments was obtained. Afterwards, the translation and back-translation processes from English to Spanish were conducted by two experts in the construct to be measured and in the culture involved. Items were analyzed by two independent judges, to calculate the inter-judge reliability (kappa coefficient). The agreement was considered high, reaching an average value of .85. Informed consent was obtained from the University Ethics Committee (reference number 22/2018) and from all the participants. All participants took part voluntarily, and they were entitled to enter into a drawing for a voucher. They were informed that questionnaires were anonymous, and that the data was strictly confidential.

By email, the participants were asked to complete the DBVS online a second time, one year later, to assess the test-retest reliability of the scale. This second time, a subsample of 96 participants was obtained, with ages also ranging from 18 to 20 years old ( $M = 19.50$ ;  $SD = .54$ ), being 19.8% males and 80.2% females. The rejection rate was 19.59%.

### Data Analysis

Statistical analyses were carried out using the Statistical Package for the Social Sciences (SPSS, version 23.0). Descriptive statistics were performed to assess the percentage of affirmative answers for each item of the DBVS. Then, convergent validity was evaluated using Spearman's correlations, and the known-group validity was assessed using Student's t-test. The factor structure of the Spanish language version of the DBVS was assessed with confirmatory factor analysis (CFA). For that end, we used the R lavaan Structural Equation Modeling program (Rosseel, 2012), with robust estimation methods considering the binary nature of the items. The diagonally weighted least squares (DWLS) estimations was used, indicated for categorical data, (e.g., binary or ordinal), as in the case of the results of the present study. Goodness-of-fit indices were calculated, including chi-square/degrees of freedom ( $\chi^2_{sb}/df$ ), root mean square error of approximation (RMSEA), comparative fit index (CFI), and incremental fit index (IFI). A  $\chi^2_{sb}/df < 5$  is considered adequate,  $\leq 2$  are good, and values equal or lower than 1 are considered very good (Paswan, 2009). A RMSEA  $\leq .10$  and a CFI  $\geq .90$  indicate adequate fit, whereas a RMSEA  $\leq .06$  and a CFI  $\geq .95$  and indicate good model fit (Byrne, 2006). Tucker-Lewis index (TLI) values that ranged between  $\geq .90$  and  $\leq .94$  are considered as an adequate fit, and values that exceed .95 indicate a very good fit (Hu & Bentler, 1999).

A differential item functioning (DIF) analysis was performed to evaluate whether males and females respond differently to each one of the DBV items after controlling for the overall score. Logistic regression was the method used to test DIF, since it is a flexible method that can be applied to binary items across two subgroups (e.g., Friesen, 2019; Moses et al., 2010). DIF analysis was conducted using the PsychoPDA Binary LogR module (Friesen, 2019; Friesen et al., 2019; Zumbo, 1999) implemented in Jamovi Statistical Software (Jamovi Project, 2021). In addition, internal consistency of the scale was examined using the Kuder-Richardson 20 (KR-20) test for dichotomous items in which values  $\geq .70$  are considered adequate (Finch et al., 2016).

Finally, to assess the degree of agreement between DBVS measurements, intraclass reliability (ICC) was calculated. ICC estimates the average of the correlations between all possible orderings of the available pairs of observations and thus avoids the problem of order dependence of the correlation coefficient. The ICC ranges from 0 to 1. Values lower than .50 indicate poor reliability whereas values higher than .90 indicate excellent reliability. In addition, values ranging between .50 and .75 are indicative of good reliability (Koo & Li, 2016). ICC is regarded as a more appropriate reliability test over standard correlation analysis than paired t-test since it takes into account the differences between the data sets (Weir, 2005). For this, measurements of DBVS were repeated a second time, one year later, which allows us to assess the test-retest reliability of the DBVS—the first time to the total sample ( $N = 490$ ), and the second time to a subsample of 96 participants.

Results

Item Analysis

First, the distribution response for each dichotomic item (coded as 0 or 1) is presented in Table 1. As can be seen, prevalence rates ranged between 3.48% and 89.92%. Eight items had prevalence rates <10% (of which three had percentages below 5%), nine items had prevalence rates ranging from 10 and 50%, and only two items presented prevalence rates higher than 50%.

Validity

Evidences of Factorial Validity

A one-factor structure model was tested using CFA. The loadings were higher than .40 (ranging from .46 to .93) and the general model indicated a good model fit through adequate goodness-of-fit indices ( $\chi^2_{sb}/df = 2.16, p < 0.001$ ; CFI = .98; RMSEA = .05, [.04-.05]; TLI = .97). Modification indexes indicated considerable local dependency between items 12 and 17 requiring correlation of error terms. These two items may be related due to their adscription to the same deviant category: thefts. For a full description see Figure 1.

Evidences of Convergent Validity

Convergent validity was assessed using Spearman's correlations. As Table 2 shows, the strongest association was between deviant behavior with deviant behavior over a lifetime. In addition, the total score on psychopathy was also related to higher antisocial behavior, followed by the interpersonal dimension of psychopathy, the behavioural dimension, and finally, the emotional dimension. All correlations were positive and statistically significant, and in almost all cases ranging from moderate to large effect sizes (from  $r = .77$  to  $r = .36$ ). The only exception was found for the emotional dimension of psychopathy ( $r = .23$ ).

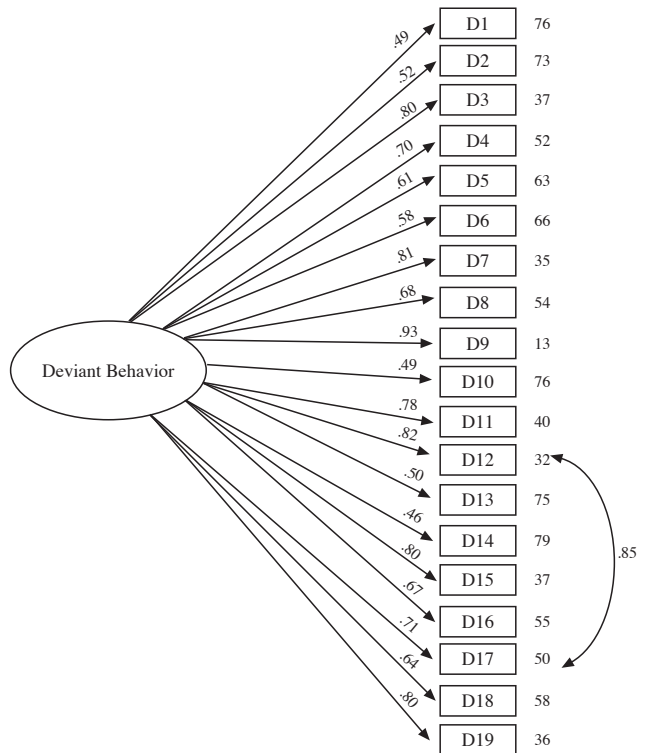


Figure 1. Validation of the One-Factor Structure of DBVS With Confirmatory Factorial Analysis. Note: all coefficients displayed in the figure above were standardized loadings that are statistically significant ( $p < .05$ )

Known-Group Validity: Gender Differences

Known-group validity was assessed through the scale's ability to identify group differences in different variables closely linked

Table 1  
Percentage of Positive Answers on the Scale Items

Item	%
1. Been to school or to class after drinking alcohol?	30.53%
2. Lied to adults (e.g., family members, teachers, etc.)?	89.92%
3. Used cocaine or heroin?	4.51%
4. Used a motorbike or a car to go for a ride without the owner's permission?	7.79%
5. Hitted an adult (e.g., teacher, family, security guard, etc.)?	7.77%
6. Used public transport without paying?	32.58%
7. Damaged or destroyed public or private property (e.g., parking meters, traffic signs, product distribution machines, cars, etc.)?	12.30%
8. Used hashish ("hash") or marijuana ("grass")?	43.56%
9. Stolen something worth more than 50 euros (e.g., in shops, at school, to someone, etc.)?	3.48%
10. Skipped school for several days without your parents' knowing?	34.97%
11. Sold drugs (e.g., hashish, marijuana, cocaine, ecstasy, amphetamines, etc.)?	7.36%
12. Stolen something worth between 5 and 50 euros (e.g., in shops, at school, to someone, etc.)?	17.59%
13. Skipped classes because you didn't feel like going, to stay with colleagues, or to go for a ride?	69.61%
14. Drove a motorbike or a car without having a driver's license?	37.83%
15. Used LSD ("acid"), ecstasy ("tablets") or amphetamines ("speeds")?	3.48%
16. Carried a weapon (e.g., knife, pistol, etc.)?	7.61%
17. Stolen something worth less than 5 euros (e.g., in shops, at school, to someone, etc.)?	36.81%
18. Done graffiti on buildings or other locations (e.g., school, public transports, walls, etc.)?	10.43%
19. Broken into a car, a house, shop, school, or other building?	5.32%

to delinquency involvement, such as gender (e.g., Junger-Tas et al., 2004). Results from Student’s t-test showed a statistically significant difference in deviant involvement ( $t(245.22) = 8.02, d = .81, p < .001$ ), with males reporting having engaged in a higher number of deviant behaviors ( $M = 6.08; SD = .20$ ) than females ( $M = 3.61; SD = .12$ ) (see Figure 2). Results clearly showed that involvement in deviant behaviors decreased over the years for females, while it peaked at 19 years of age for males. In turn, males were involved in more deviant behaviors than females in any age range. However, neither age nor gender were statistically significant.

Reliability

On the one hand, the internal consistency of the DBVS was assessed using KR-20 for the 19 items composing the scale. The result of KR-20 was .79 and no significant improvements were found excluding any item. In addition, ICC was performed to assess test-retest reliability. ICC estimates and their 95% confident intervals showed good reliability values ( $ICC = .79; [.69-.86]$ ). Therefore, reliability of the DBVS with both analyses, the KR-20 and the ICC, demonstrated the adequacy and reliability of the DBVS in the present sample. On the other hand, differential functioning analyses suggest that four items (i.e., DBV 1, DBV 7, DBV 13, and DBV 14) exhibiting gender differential item functioning. Those four items showed extremely small effect sizes ( $\Delta R^2 \leq 0.04$ ). According to Zumbo (1999) values  $\Delta R^2 \leq 0.13$  are considered negligible.

Discussion

The aim of this study was to assess the psychometric properties of the DBVS in a Spanish sample of young adults, and to our knowledge, this is the first paper testing it in the Spanish context.

First, item analysis revealed the overall psychometric adequacy of the items of the scale. Items representing more severe deviant

behaviors had a lower prevalence (e.g., used LSD, ecstasy, or amphetamines) compared to milder deviant behaviors that had a higher prevalence (e.g., lied to adults). In this vein, these results followed the expected pattern according to the previous literature (Bendixen & Olweus, 1999) and were very similar to those obtained in some Portuguese studies (Sanches et al., 2016), showing that serious infractions have much lower prevalence rates than minor infractions.

The factor validity analyses supported the one-factor structure model, with the single-factor first-order. All factor loadings were satisfactory, with the lowest being .46 for item 14 (“Drove a motorbike or a car without having a driver’s license”) and the highest .93 for item 9 (“Stolen something worth more than 50 euros”). The general model showed good fit through adequate goodness-of-fit indices. The results obtained in this study using CFA analysis showed, like in previous research (Sanches et al., 2016), that the one-factor model achieved an adequate fit across the Spanish young adult sample. Recent studies that analyze other antisocial behavior tools also found a consistent one-factor model (Mezquita et al., 2021).

The convergent validity of the DBVS with measures of deviant behavior over life and psychopathy revealed mostly moderate to large positive correlations showing the expected construct convergence, and in line with the ones found in previous studies (e.g., Dube et al., 2003; Hughes et al., 2017; Valdebenito et al., 2015). The highest correlations were obtained with deviant behaviors over life (positive), total psychopathy score, and the interpersonal dimension of psychopathy. According to previous studies, there was a strong and positive correlation between psychopathic traits and the frequency of delinquent behaviors (e.g., Salekin et al., 2006; Vincent et al., 2003), which implies that youths with higher psychopathic traits tend to display more serious forms of antisocial behavior (Pardini & Loeber, 2008).

In terms of known-groups validity, the result of the comparison of males and females confirmed that males do indeed score higher on the DBVS. This gender difference is also supported by most of

Table 2  
Convergent Validity

	DBVS Lifetime	YPIIS Total	YPIIS Interpersonal	YPIIS Emotional	YPIIS Behavioral
DBVS – 12 Months	.77**	.45**	.38**	.23**	.36**

Note: DBVS=Deviant Behavior Variety Scale; YPIIS= Youth Psychopathic Inventory – Short Version; \* $p \leq .05$ ; \*\* $p \leq .001$

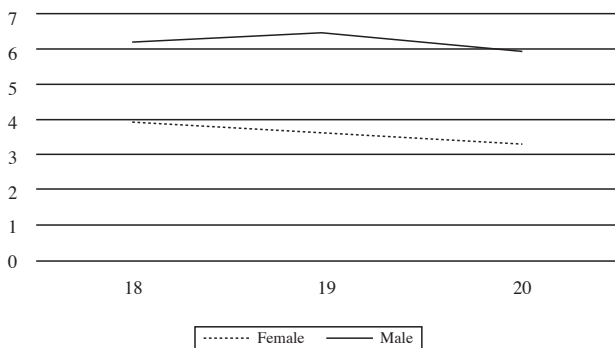


Figure 2. Mean of the Variety Deviance Score for Each Age-Cohort, Separated by Gender

the previous research using self-reported measures of deviant and antisocial behaviour: males engage in deviance more frequently and engage in more serious and violent forms of delinquency (e.g., Bendixen & Olweus, 1999; Sanabria & Uribe, 2009; Stolzenberg & D’Alessio, 2008). The same results were found by Sanches and colleagues (2016), using the DBVS questionnaire in a Portuguese sample. This may be explained by the fact that antisocial behavior and aggression can be viewed as a behavior driven by gender roles. That is, gender differences in criminal and aggressive behavior reflect differences in normative expectations that society holds for men and women. In this line of research, previous studies noted that across the lifespan, males are more physically aggressive and violent than females (Björkqvist, 2018). According to Fox and DeLateur (2014) and Stone (2015), the greatest difference between males and females is found in physically violent behavior, with

males committing the majority of violent acts (Fox & DeLateur, 2014; Stone, 2015). The perception of power and control associated with masculinity norms might be one of the most important factors contributing to this difference (Kimmel & Mahler, 2003).

An analysis of the internal consistency measured by KR-20 revealed good values well above the recommended minimum of .70 for the total scale and its factors (Finch et al., 2016). Moreover, the test-retest reliability agreement measurement through the ICC reliability test also confirmed the stability of deviant behaviors over time. This fact is very important, and it adds a great value to the study since many of the questionnaire's validations do not consider the temporal stability of the measurements (Basto-Pereira & Farrington, 2020; Pechorro et al., 2014; Sanches et al., 2016). Finally, our study suggests that males and females with the same overall score did not substantially differ in the likelihood to report each one of the deviant behaviors assessed. This finding is important, since it suggests the items of this scale are not particularly affected by gender bias.

Taken together with these findings from the factor analysis, the DBVS questionnaire demonstrates both validity and reliability. In addition, the similarity with Sanches and colleagues' (2016) findings regarding the psychometric properties of DBVS among Portuguese youths, in terms of factor structure and estimates of reliability, suggests that results from the DBVS are replicable across distinct samples in different countries with slightly different ages.

Although the DBVS has presented good psychometric properties, some limitations must be addressed. Measures in the current study were based on self-report questionnaires. This method has the disadvantage of being less reliable, since it might be affected by memory, bias, and concealment. For this reason, future work would benefit from the inclusion of criterion measures from other domains (e.g., interviews, parent reports, etc.) (Drislane et

al., 2014). However, since participants in this study were younger than those in previous studies (Dube et al., 2003), they were able to recall recent events more easily. In addition, it has been shown that retrospective designs with young populations show good reliability results for adverse childhood experiences (Pinto et al., 2014). On the other side, as commented in the procedure, the data collection was carried out by non-probability sampling (snowball and convenience sampling).

In addition, to assess the psychometric properties of the scale in other kind of samples, such as juvenile offenders or clinical samples, it is also relevant to know if similar results are obtained. The increase of sample size would also improve the range of data analyses carried out, such as the measurement invariance test with different groups (men/women; younger adults/older adults). Despite these limitations, our findings do provide support for the use of the DBVS in a Spanish sample of young adults.

Thus, this research has analysed the psychometric properties of the Deviant Behavior Variety Scale among a Spanish sample of young adults. The results indicated that DBVS can be considered a useful instrument in assessing the deviant behavior construct among Spanish young adults. Research on adolescents and youths' deviant behaviors is vital for the developing of more effective prevention programs in community settings. For such aims, it is crucial to have a valid and reliable instrument to assess this construct, such as the DBVS.

Therefore, the DBVS can be an important tool to identify deviant behaviors among adolescents and young adults, thus helping to understand the development and maintenance of deviant behaviors and to improve prevention programs. It would be advisable that future studies replicate these findings in other groups of young adults in order to test the applicability of the DBVS in different contexts.

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