PSYCHOMETRIC PROPERTIES
OF THE PERSONALITY INVENTORY FOR DSM-5
IN A ROMANIAN COMMUNITY SAMPLE

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Abstract

The Personality Inventory for DSM-5 (PID-5) evaluates 25 maladaptive personality traits proposed in the Alternative Model of Personality Disorders. The questionnaire has been extensively investigated and validated in several languages. The current research sought to examine the psychometric properties of the instrument in a sample of nonclinical Romanian participants ($N = 1276$). Results indicated excellent internal consistency for the domain level, and very good reliability for the facet level. The assumption of unidimensionality was supported at both the domain and facet levels, apart from Risk Taking. Two domain scoring methods were also compared. One of them takes into consideration all the 25 lower order facets, whereas the other uses only 15 facets. Results show that mean differences across the two scoring methods were small, except for Disinhibition. Moreover, confirmatory factor analyses revealed slightly better fit indices for the model which uses 15 facets only. Lastly, the hierarchical structure of maladaptive personality traits was explored. Results are discussed in the light of previous literature.

Keywords: Personality Inventory for DSM-5; maladaptive personality traits; personality disorders; psychometric properties; community sample

Introduction

The third edition of the Diagnostic and Statistical Manual of Mental Disorders ([DSM], American Psychiatric Association [APA], 1980) introduced the multiaxial system and distinguished between personality disorders (Axis II) and other clinical conditions (Axis I), thus highlighting the special status of personality disorders as a diagnostic category (Krueger & Hobbs, 2020). Personality disorders were conceptualized as distinct categories, deriving from the idea that they represent

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natural classes or constellations of "frequently encountered problematic personality features" (Morey, 1988, p. 315). Although the categorical system was maintained in the fourth and fifth editions of the DSM (APA, 1994, 2013), a growing body of evidence suggests that it has a number of limitations that can no longer be disregarded. Among these issues, one can enumerate: a) the arbitrary cutoff points used to distinguish between the presence and the absence of a PD; b) the heterogeneity within the same diagnostic category, so that people with (completely) different constellations of symptoms are diagnosed with the same PD; c) the high prevalence of the PD Not Otherwise Specified diagnosis, which suggests that the existing diagnosis categories do not encompass the whole range of PD symptoms that are identified by practitioners; d) the high rates of comorbidity; e) the lack of an adequate empirical foundation for some of the PDs; f) low test-retest and interrater reliability etc. (Widiger, 2013; Widiger & Trull, 2007).

Consequently, many authors supported the transition toward a dimensional model, which was seen as a solution to many of the above mentioned issues (e.g., Costa & McCrae, 1992; Frances, 1993; Livesley, 1991; Westen & Shedler, 1999; Widiger, 1991). In this alternative model, relevant personality dimensions are evaluated in a quantitative manner, in contrast to the categorical approach, which is qualitative in nature (the patient does or does not have a particular PD, depending on the number of diagnostic criteria they met). The dimensional approach to personality disorders is more flexible than the categorical model and provides the clinician with more information, thus potentially having more clinical utility (Widiger & Frances, 1994). Despite these advantages, an abrupt shift toward the dimensional model was thought to be inadvisable. Most personality disorder experts supported a hybrid model and agreed that the categorical model is the least adequate option (Bernstein et al., 2007). The traditional approach is still maintained in Section II of the DSM-5. However, an Alternative Model for Personality Disorders (AMPD) is described in Section III, *Emerging Measures and Models*. The hybrid model seeks to make the transition from the categorical model to the dimensional alternative less disruptive, by combining elements specific to both systems. According to the DSM-5 (APA, 2013), seven criteria must be met for a PD diagnosis, two of which (criteria A and B) are central to this approach. Criterion A evaluates the level of self (identity and self-direction) and interpersonal (empathy and intimacy) functioning. A moderate or greater disturbance in one or both of these areas predicts the presence of a PD. Criterion B assesses the presence of 25 maladaptive personality traits, which are distributed across 5 domains: Negative Affectivity (vs. Emotional Stability), Detachment (vs. Extraversion), Antagonism (vs. Agreeableness), Disinhibition (vs. Conscientiousness), Psychoticism (vs. Lucidity). Given that these domains represent extreme poles of the Five Factor Model meta-factors, the continuity between normality and pathology is ensured.

The Personality Inventory for DSM-5 (PID-5) was developed to evaluate the 25 maladaptive personality traits comprised by Criterion B. Since the publication of

the initial validation study (Krueger et al., 2012), the instrument was included in more than 200 studies (Zimmermann et al., 2019). PID-5 was translated in many languages, such as French (Roskam et al., 2015), Dutch (Bastiaens et al., 2016), Spanish (Gutiérrez et al., 2017), or Hungarian (Labancz et al., 2020). Two methods can be used for scoring the five high order domain scales. One of the alternatives was proposed in the initial study of Krueger et al. (2012) and takes all the 25 facet scales into account. However, in the official version of the instrument published on the APA site (Krueger et al., 2013), clinicians are instructed to calculate the domain scores by adding up specific groups of three facets. Therefore, this scoring algorithm uses only 15 lower order facets, which were selected on the basis of exhibiting low interstitiality in the original study conducted by Krueger et al. (2012). More precisely, Emotional Lability, Anxiousness, and Separation Insecurity form the Negative Affectivity domain. Withdrawal, Anhedonia and Intimacy Avoidance are combined to form Detachment. Antagonism consists of Manipulativeness, Deceitfulness and Grandiosity. Disinhibition comprises Irresponsibility, Impulsivity and Distractibility. Finally, Psychoticism subsumes Unusual Beliefs & Experiences, Eccentricity and Perceptual Dysregulation. In a recent study, Watters et al. (2019) concluded that the two scoring algorithms are more comparable than dissimilar. Both methods were equally effective in distinguishing between a clinical and a community sample. Moreover, the authors report that the correlations between the five maladaptive trait domains and external criteria were similar across the two scoring approaches. Nonetheless, results also indicated that the profiles of two patients diagnosed with borderline personality disorder differed substantially depending on the scoring method. Consequently, Watters and her colleagues consider that using only 15 lower order facets might be more advantageous for research purposes, whereas more studies are needed in order to determine what scoring method is more suitable for clinical contexts.

Previous research generally indicates that the PID-5 is a reliable and valid instrument. For example, a recent meta-analysis conducted by Somma et al. (2019) concluded that the five-factor structure was replicated in most of the studies and that there were no significant differences across age groups or nationalities. Despite the fact that some lower order facets load significantly in more than one domain and the magnitude of the cross-loadings varies from one study to another, a meta-analysis conducted by Watters & Bagby (2018) indicated that combining different samples resulted in decreased interstitiality. The PID-5 further demonstrates good construct and criterion validity (Al-Dajani et al., 2016), as it correlates with the Big Five personality domains and facets, with existing measures of personality pathology (e.g., Anderson et al., 2013; Few et al., 2013), as well as with internalizing and externalizing outcomes in daily life (Roche et al., 2019). Researchers also sought to evaluate the hierarchical structure of the DSM-5 personality traits, using Goldberg's (2006) method. For example, Wright et al. (2012) extracted an initial unrotated factor ("Personality Pathology") that contained all the lower order scales. At the second

level of the hierarchy, the initial factor divided into the Internalizing and Externalizing factors. At the third level, Detachment and Negative Affectivity emerged from the Internalizing factor, whereas in the four-factor solution, the Externalizing factor split into Antagonism and Disinhibition. At the lowest level, the Psychoticism domain emerged. These results were replicated and extended by subsequent research, which showed that the PID-5 shares a common underlying hierarchical structure with other instruments aimed at measuring normal or psychopathological personality traits (Gutiérrez et al., 2019; Thomas et al., 2013; Van den Broeck et al., 2014; Wright & Simms, 2014).

To date, no study sought to examine the psychometric properties of the instrument in the Romanian population. However, in a study published in 2017, Grigoras & Wille examined the correlations among the Dark Triad, the FFM personality traits and the DSM-5 maladaptive personality traits on a sample of 266 Romanian Ministry of Internal Affairs employees. They report being able to replicate the five-factor solution for the PID-5. Nonetheless, the results of the analyses are not presented. Acceptable internal consistency was obtained for the majority of the PID-5 facet traits and domains. However, seven lower order scales had internal consistency coefficients lower than .70 (e.g., Irresponsibility, Manipulativeness).

The aim of the present study was twofold. Firstly, we sought to examine the psychometric properties of PID-5 in a larger sample of nonclinical Romanian adults. Secondly, we thought it was important to determine whether the hierarchical structure of the maladaptive personality traits could be replicated in the Romanian sample. Similarly to previous studies, we planned to test the assumption of domain and lower order facets unidimensionality, by means of reliability and parallel analyses. To examine whether the PID-5 factor structure replicates in the current sample, we performed exploratory and confirmatory factor analyses and compared the adequacy of the 25-facet and 15-facet models. Moreover, similarly to Watters et al. (2019), we compared domain means across the two scoring methods. Finally, we explored the hierarchical structure of the DSM-5 personality traits using Goldberg's (2006) method.

Method

Participants

A community sample of 1276 volunteers took part in the study (64.5% females). Participants were aged 18 thru 72 ($M = 37.54$; $SD = 11.78$). A number of 21 participants (1.7 %) did not attend high school, 214 participants (16.8 %) had a high school diploma, 97 participants (7.6 %) pursued post-secondary non-tertiary education, 366 participants (28.7 %) had a bachelor's degree and 208 participants (16.3 %) had a master's degree or higher. A number of 370 participants (29 %) did

not report their education level. Participants did not receive any compensation for taking part in this study.

Instrument

Personality Inventory for DSM-5. The PID-5 (Krueger et al., 2012) is a 220-item self-report questionnaire. The instrument assesses 25 maladaptive personality traits that are combined to form five higher order domains (Negative Affectivity, Detachment, Antagonism, Disinhibition, and Psychoticism). Two independent translations of the instrument were obtained and compared, before agreeing on a preliminary Romanian version of the questionnaire. This version was back-translated into English and compared with the original text. The necessary adjustments were made before pretesting the instrument on 149 participants. Internal consistency analyses were performed and some items were reformulated. The new version of the questionnaire was assessed on a new sample consisting of 200 participants. The results obtained were used to conduct a fourth and final revision of some of the items.

Procedure

The study was approved by the Research Ethics Committee of the Faculty of Psychology and Educational Sciences (Alexandru Ioan Cuza University of Iasi). Data were collected using the PsihoProfile platform (http://www.psihoprofile.ro). The site encompasses a variety of psychological instruments that are freely made available to mental health practitioners, including the Romanian version of the PID-5 questionnaire. Participants were recruited by psychologists who have an account on the platform. Informed consent was obtained from all participants and the anonymity of their responses was guaranteed. Those who agreed to take part in the study were presented with two options: (1) they were given an access link to a page on PsihoProfile where participants filled out the form; or (2) they could fill out the paper-and-pencil version of the questionnaire; their answers would then be manually entered into the PsihoProfile platform by the psychologist who administered the instrument. Most participants completed the measure online (69.82%), whereas the rest of the sample was assessed using the paper-and-pencil questionnaire. The average time participants spent answering the questionnaire was 35 minutes.

Results

Descriptives and Distributions

Means and standard deviations for both the trait facets and the domains are reported in Table 1, along with skewness and kurtosis. Distributions were in many cases right-skewed (Callousness, Deceitfulness, Depressivity, Eccentricity, Intimacy

Avoidance, Irresponsibility, Manipulativeness, Perceptual Dysregulation). Also, the distributions of two domains, Psychoticism and Antagonism (for the 25-facet model) were right-skewed. All facets and domains, except for Callousness, had a platykurtic distribution (K < 3). The Kurtosis value for Callousness (K = 3.629) indicates a leptokurtic distribution.

Internal Consistency and Unidimensionality

The unidimensionality of the 25 PID-5 facets was tested through parallel analysis and indices of internal consistency (Cronbach's α).

Internal consistency (Cronbach's α) was high, with indices ranging from .711 at the lowest level for Restricted Affectivity to .945 for Depressivity (Table 1). Initially, the internal consistency was not satisfactory for the Risk Taking trait facet (α = .691). Consequently, we eliminated item 35 (α = .763). Higher order domains obtained alpha coefficients ranging from .892 for Antagonism to .957 for Psychoticism. For the 25-facet model, higher order domains obtained alpha coefficients ranging from .900 for Disinhibition to .954 for Detachment (see Table 1).

Table 1. Descriptive statistics and reliability coefficients for the trait facets and domains

PID-5 scales and domains	*M*	*SD*	Skew	Kurt	α
Anhedonia	6.96	5.27	.875	.137	.857
Anxiousness	10.47	7.16	.510	- .695	.914
Attention Seeking	8.39	5.05	.332	- .537	.852
Callousness	5.68	6.20	1.734	3.629	.864
Deceitfulness	5.54	5.11	1.245	1.379	.846
Depressivity	7.96	9.26	1.445	1.503	.945
Distractibility	7.40	6.57	.874	.040	.924
Eccentricity	8.76	8.97	1.168	.798	.943
Emotional Lability	9.17	5.31	.198	- .728	.858
Grandiosity	5.63	3.84	.471	- .379	.785
Hostility	9.84	6.23	.541	- .172	.856
Impulsivity	5.60	3.90	.673	- .124	.798
Intimacy Avoidance	3.93	3.53	1.074	.817	.745
Irresponsibility	3.70	3.62	1.212	1.290	.770
Manipulativeness	3.07	2.87	1.092	1.140	.771
Perceptual Dysregulation	5.80	6.51	1.589	2.582	.889
Perseveration	8.92	5.40	.255	- .634	.826
Restricted Affectivity	7.52	3.97	.400	- .078	.711
Rigid Perfectionism	4.92	3.52	.123	- .537	.872
Risk Taking	17.65	5.81	.290	- .224	.763
Separation Insecurity	7.45	5.16	.377	- .719	.853
Submissiveness	3.45	2.84	.619	- .395	.817
Suspiciousness	7.44	3.93	.391	- .287	.723

PID-5 scales and domains	*M*	*SD*	Skew	Kurt	α
Unusual Beliefs & Experiences	8.84	6.46	.726	- .098	.821
Withdrawal	8.84	6.46	.726	- .098	.898
Negative Affect*	27.10	15.24	.351	- .624	.936
Detachment*	19.74	12.87	.822	.279	.925
Antagonism*	14.24	9.81	.948	.958	.892
Disinhibition*	16.71	12.16	.774	.035	.925
Psychoticism	18.85	18.20	1.309	1.563	.957
Negative Affect**	62.80	25.08	.310	- .634	.950
Detachment**	35.15	23.11	.949	.523	.954
Antagonism**	28.33	18.23	1.073	1.520	.936
Disinhibition**	49.90	14.90	.643	.732	.900

Note. *15-facet model; **25-facet model; item 35 was eliminated from the Risk Taking subscale

Parallel analyses with 1,000 resamples supported a single-factor structure for each of the five domains and for the 25 lower order facets, except for Risk Taking. For this scale, the first three eigenvalues from the actual data were 4.528, 1.857, .990; the corresponding first three 95th percentile random data eigenvalues were 1.209, 1.154, and 1.120, suggesting the retention of two components for rotation. An exploratory factor analysis revealed that the reverse-scored items (7, 87, 98, 164, 215) loaded strongly on the second component (factor loadings = .554 to .729). The rest of the items composed the first factor (factor loadings = .509 to .768). In the study of Labancz et al. (2020), parallel analyses also showed that Risk taking was not unidimensional. However, the authors report that they extracted four factors. Our findings are more similar to the results reported by Quilty et al. (2013), as well as by Riegel et al. (2018), who found that Risk Taking split into two factors, with reverse-scored items loading on a separate component.

Factor Structure Replication

An exploratory factor analysis of the 25 PID-5 facet scales followed by Equamax oblique rotation of the 25 PID-5 facet scales was conducted. The sampling adequacy index suggested that the data were appropriate for factor analysis (KMO = .940). Bartlett's Test of Sphericity was highly significant, $\chi^2_{(300)}$ = 23691.086, *p* < .001. Approximately 71% in the variance of the model was explained by five factors. However, parallel analyses conducted on the 25 facet scales supported a four factor structure. The first five eigenvalues from the actual data were 11.140, 2.482, 1.716, 1.480, 1.010; the corresponding first seven 95th percentile random data eigenvalues were 1.298, 1.251, 1.217, 1.190, 1.163, suggesting the retention of four components.

The first factor was mainly marked by facets from the Negative Affectivity domain – Anxiousness, Emotional Lability, Perseveration, Submissiveness, and

Separation Insecurity. However, Depressivity and Anhedonia (originally from Detachment), Distractibility, Impulsivity, Irresponsibility (originally from Disinhibition), as well as Perceptual Dysregulation and Eccentricity (originally from Psychoticism), also had their primary loadings on the first factor. Some of these findings are congruent with results reported by previous research. For instance, in the French version of the PID-5, Roskam et al. (2015) found that Depressivity loaded more strongly on Negative Affectivity than on Detachment, whereas Labancz et al. (2020) also found that Anhedonia was more strongly associated with Negative Affectivity than with Detachment. Lotfi et al. (2018) report that Impulsivity displayed a significant loading on the Negative Affectivity factor, whereas Distractibility also had its primary loading on Negative Affectivity instead of Disinhibition.

The second factor was more easily identifiable and contained Manipulativeness, Deceitfulness, Attention Seeking, Callousness, and Grandiosity, thus bearing a strong resemblance to Antagonism. Risk Taking (originally from Disinhibition) also loaded on this component, paralleling the findings reported by Wright & Simms (2014). Hostility loaded on both Negative Affectivity and Antagonism, as would have been expected (APA, 2013). Withdrawal, Intimacy Avoidance, and Restricted Affectivity had their main loadings on the third factor, which we decided to name Detachment. The fact that Restricted Affectivity only loaded on the Detachment factor replicates the results reported by some previous studies (e.g., Bastiaens et al., 2015, Roskam et al., 2015) and supports the suggestion of moving this facet from Negative Affectivity to Detachment (Watters et al., 2019). Callousness also loaded on the Detachment factor, similarly to the results reported in the study conducted by Riegel et al. (2018), who found that this facet demonstrated similar loadings on both Antagonism and Detachment in their nonclinical sample. Depressivity loaded on both Negative Affectivity and Detachment, as described in the DSM-5 (APA, 2013).

Rigid perfectionism loaded strongly on the fourth factor, along with Suspiciousness, Unusual Beliefs and Experiences, Grandiosity, or Perseveration. As mentioned above, Grandiosity had a similarly large loading on its expected factor (Antagonism). Suspiciousness mainly loaded on the fourth factor, but it also showed loadings that exceeded .30 on Negative Affectivity and Detachment, as indicated by the DSM-5 (APA, 2013). Anxiousness, Attention Seeking, Emotional Lability, and Separation Insecurity also loaded on the fourth factor. Seeing that this factor was the least pure and difficult to interpret, we decided not to name it. A similar combination of traits (Rigid Perfectionism, Grandiosity, and Unusual Beliefs and Experiences) was reported by Coelho et al. (2020) in a sample of United Arab Emirates nationals. The authors explain this result by arguing that people high in Psychoticism might be inclined to consider themselves superior or unique relative to others. Therefore, they might also exhibit behaviors that are characterized by Antagonism (Grandiosity) and Detachment (Rigid Perfectionism). The full results of the EFA are reported in Table *2*.

Table 2. Rotated factor loadings for four-factor solution

PID-5 scales and domains	Factor 1	Factor 2	Factor 3	Factor 4
Anhedonia	**.677**	.113	**.538**	.053
Anxiousness	**.744**	.002	.223	**.434**
Attention Seeking	.177	**.630**	-.174	**.460**
Callousness	.160	**.674**	**.502**	.092
Deceitfulness	.269	**.760**	.286	.066
Depressivity	**.781**	.141	**.418**	.148
Distractibility	**.770**	.216	.366	.150
Eccentricity	**.547**	.317	**.448**	.301
Emotional Lability	**.690**	.090	.084	**.481**
Grandiosity	-.212	**.500**	.074	**.629**
Hostility	**.477**	**.499**	.238	.381
Impulsivity	**.595**	**.503**	.019	.145
Intimacy Avoidance	.094	.057	**.730**	.134
Irresponsibility	**.562**	**.546**	.324	-.071
Manipulativeness	.057	**.798**	.177	.231
Perceptual Dysregulation	**.567**	.292	**.413**	.346
Perseveration	**.557**	.199	.326	**.537**
Restricted Affectivity	-.099	.268	**.718**	.180
Risk Taking	-.075	**.637**	.070	.097
Rigid Perfectionism	.043	-.038	.239	**.838**
Separation Insecurity	**.550**	.175	-.119	**.476**
Submissiveness	**.561**	.040	.213	.240
Suspiciousness	.322	.217	.377	**.536**
Unusual Experiences	.240	.358	.323	**.471**
Withdrawal	.361	.045	**.746**	.183

Note. Loadings ≥ .40 are in bold

Although we could not replicate the five-factor structure that was reported by previous studies (e.g., Krueger et al., 2012), we still tested two five-factor models (the 15-facet model and the 25-facet model, respectively) through confirmatory factor analysis.

Confirmatory Factor Analysis

The following thresholds were considered acceptable in evaluating model fit: Tucker-Lewis Index (TLI) and Comparative Fit Index (CFI) ≥ .95, a cutoff value close to .06 for the root mean squared error of approximation (RMSEA) and less than .08 for the standardized root mean squared residual (SRMR) (Hu & Bentler, 1999).

We first tested the model containing only 15 facets. A good model fit was obtained after allowing some of the error terms to correlate, based on the modification indices of the initial model, $\chi^2_{(62)}$ = 542.715, $p < .001$, RMSEA = .081 (90% CI = 0.075-0.087), TLI = .930, CFI = .961, SRMR = .081. Initial fit indices were not adequate, $\chi^2_{(40)}$ = 1566.230, $p < .001$, RMSEA = .121, TLI = .844, CFI = .882, SRMR = .0651.

We also tested the five-factor model reported by Krueger et al. (2012). The following fit indices were obtained after correlating a number of error terms, based on the modification indices of the initial model, $\chi^2_{(152)}$ = 1877.593, p< .001, RMSEA = .088 (90% confidence interval = 0.084-0.086), TLI = .875, CFI = .928, SRMR = .0689. Initial fit indices were unsatisfactory, $\chi^2_{(60)}$ = 5767.413, p < .001, RMSEA = .128, TLI = .736, CFI = .766, SRMR = .0944.

Mean differences across the two scoring methods

A paired samples *t* test was used to compare domain means across the two scoring methods. There were no significant differences across the two scoring methods for the Negative Affectivity domain. The 15-facet scoring method produced slightly larger scores for Detachment and Antagonism, when compared with the 25-facet scoring method. Similarly to the results reported by Watters et al. (2019), we found that the 25-facet scoring method resulted in higher means for Disinhibition (see Table 3 for full results). According to Cohen's (1988) rule of thumb for evaluating effect sizes, the differences for Detachment and Antagonism were small, whereas the mean difference for Disinhibition reached a large effect size. Following Watters et al.'s example, we sought to examine what lower order facet(s) contributed to the large difference across the two scoring methods for Disinhibition. Therefore, we calculated and compared the means for all the facets included in this domain. The two highest means were (lack of) Rigid perfectionism (*M* = 1.73, *SD* = .66) and Risk Taking (*M* = 1.22, *SD*= .45). Results showed that the mean for (lack of) Rigid perfectionism was significantly higher than the mean for Risk Taking, $t(1275)$ = 21.73, p < .001. Again, our results closely replicate the findings of Waters et al., and draw attention to the fact that reverse-scoring Rigid Perfectionism (which is needed when computing Disinhibition) does not seem to adequately capture the lack of this trait.

Table 3. Comparison of the domain means across the two scoring methods

Domain	*M*	*SD*	*t*(1275)	*p*	*d*
Negative affect					
25-facet scoring method	1.19	.47	.92	.355	.04
15-facet scoring method	1.18	.66			
Detachment					
25-facet scoring method	.78	.51	-8.22	<.001	.22
15-facet scoring method	.82	.53			
Antagonism					
25-facet scoring method	.66	.42	-5.02	<.001	.15
15-facet scoring method	.68	.46			
Disinhibition					
25-facet scoring method	1.10	.33	37.00	<.001	**1.01**
15-facet scoring method	.76	.55			

DSM-5 Personality Trait Model Replication

We explored the hierarchical structure of the *DSM-5* personality traits using Goldberg's (2006) method. This simple approach requires extracting the first unrotated principal component from the data set, then estimating a series of models with an increasing number of factors. The process stops when the model contains "a component on which no variable has its highest factor loading" (Goldberg, 2006, p. 350). Regression-based factor scores were estimated for each solution, allowing us to compute across-model correlations. These correlations serve to estimate the paths between levels of the resulting hierarchical representation. Figure 1 illustrates the correlations between subordinate and superordinate factors.
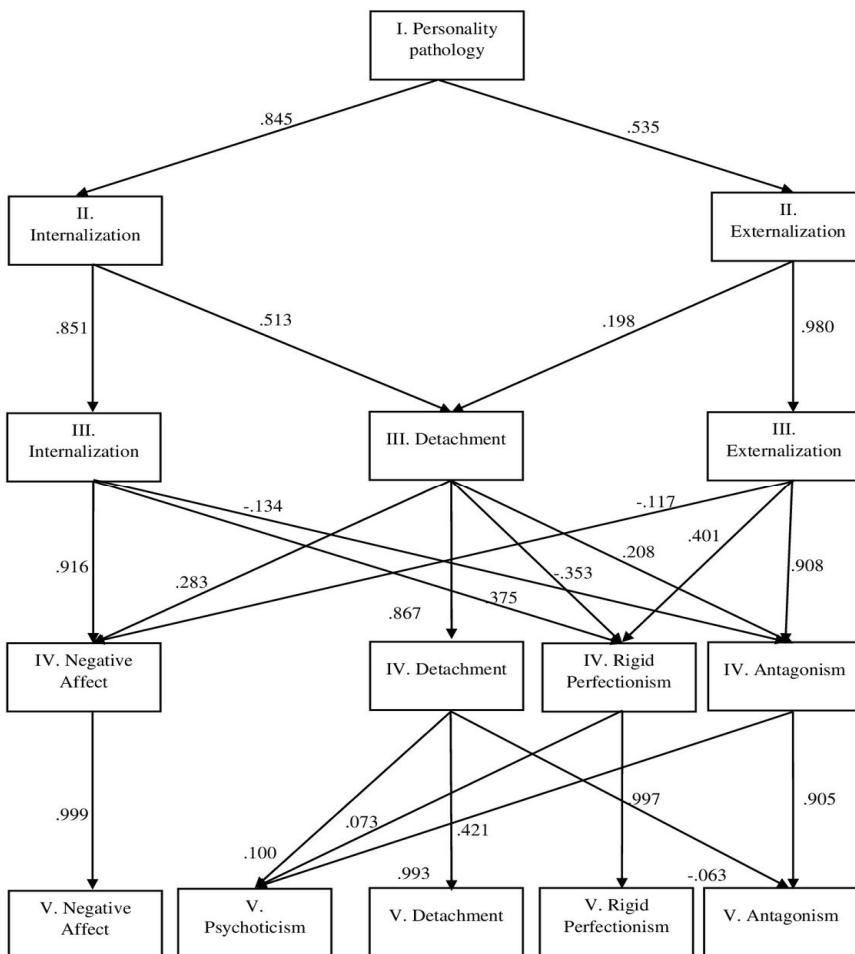

Figure 1. The hierarchical structure of the maladaptive personality traits

In the one-factor solution, all but one (Risk Taking) trait facets had loadings larger than .40, suggesting that this factor captures the overall "personality pathology". At the second level, the two factors that emerged were labeled Internalization and Externalization. Depressivity, Anxiousness, Distractibility and Anhedonia had the largest loadings (>.80) on Internalization, which mainly contained facets that are subsumed under Negative Affectivity, Detachment, and Psychoticism. Manipulativeness, Deceitfulness, Grandiosity, as well as Risk Taking, had large loadings on Externalization, which was mainly defined by trait facets belonging to Antagonism. Hostility, Unusual Beliefs & Experiences, as well all the Irresponsibility, Impulsivity (facets contained by Disinhibition) showed similar loadings on both factors. At the third level, two factors emerged from Internalization. Withdrawal, Anhedonia, Intimacy Avoidance, Restricted Affectivity, Callousness, and Irresponsibility formed a distinct factor, which we decided to name Detachment. The other factor which resulted from Internalization was mainly marked by facets belonging to Negative Affectivity, such as Anxiousness, Emotional Lability, Perseveration, and Separation Insecurity (factor loadings = .716 to .851). However, it also included facets contained by Detachment (Depressivity, Anhedonia) and Disinhibition (Distractibility, Impulsivity). The Externalization factor maintained its structure. At the fourth level, Antagonism emerged. Manipulativeness, Deceitfulness, Attention Seeking, Callousness, Risk Taking, and Grandiosity had loadings larger than .500 on the Antagonism factor. The second factor which took shape at this level was mainly marked by Rigid Perfectionism (factor loading = .804) and Grandiosity (factor loading = .698), along with facets which had their primary loadings on other factors (e.g., Suspiciousness, Attention seeking, Unusual Beliefs and Experiences). At the lowest level, Risk taking, Unusual Beliefs and Experiences, Perceptual Dysregulation and Eccentricity formed the Psychoticism factor (factor loadings =.475-.711). However, Perceptual Dysregulation and Eccentricity continued to have their primary loadings on Negative Affectivity. All other factors maintained the same structure.

Discussion

The purpose of the present research was to explore the psychometric properties of the Personality Inventory for DSM-5 in a Romanian sample. Results indicated excellent internal consistency for the domain level and high reliability for the facet level. One reversed-scored item from the Risk Taking scale (item 35) was eliminated in order to obtain an acceptable internal consistency. Risk Taking was also the only facet that displayed a two-factor structure. This issue is due to reverse-scored items. Negatively worded items might have a negative impact on the internal

consistency of a scale and tend to form a separate factor, which is why Roszkowski & Soven (2010) suggest using direct items only.

The exploratory factor analysis showed that 14 out of the 25 facets loaded on more than one domain. Given the complexity of personality, cases of cross-loadings are unsurprising (Watters et al., 2018). Although we were not able to replicate the five-factor solution through EFA, results of the CFA indicated that the 15-facet model had an adequate fit. Seeing that the mean differences across the two scoring methods were small, except for Disinhibition, we recommend that future studies using the Romanian version of the PID-5 adopt the 15-facet scoring method. In clinical settings, psychologists should be mindful of the fact that the two scoring methods might generate slightly different patient profiles (Watters et al., 2019). More research is needed in order to establish which of the two scoring approaches is more suitable for clinical evaluation purposes.

The hierarchical structure of maladaptive personality traits could not be perfectly replicated. Contrary to previous studies (e.g., Gutiérrez et al., 2017; Wright et al., 2012), traits belonging to Disinhibition did not form a separate factor and exhibited similar loadings on Internalization and Externalization. In the four-factor solution, these traits were divided across Negative Affectivity (Irresponsibility, Distractibility, Impulsivity), Antagonism (Risk Taking) and a separate factor marked by Rigid Perfectionism. This latter component bears a strong resemblance to the Compulsivity factor in the Dimensional Assessment of Personality Pathology (Livesley & Jackson, 2009). As reported by previous studies (e.g., Van den Broeck et al., 2014; Wright et al., 2012), the third level of the hierarchy corresponded to the Big Three model of temperament described by Clark & Watson (2008). In the three-factor solution, Negative Affectivity corresponds to the Big Three's Neuroticism/Negative Emotionality, whereas Detachment and Externalization parallel Extraversion/Positive Emotionality (reversed-keyed) and Constraint vs. Disinhibition, respectively. The fourth level of the hierarchy highlights the common ground between the Big Three and the Big Five models of personality. The two models share Neuroticism, Extraversion, Conscientiousness, and Agreeableness, which were previously reunited under the name of the Big Four (Watson et al., 1994). The pathological variants of these personality meta-factors were represented at the fourth level of the hierarchy. Psychoticism, which reflects the Big Five trait of Openness, only emerged at the lowest level of the hierarchy. These results suggest that, despite some differences, the levels of the hierarchical structure we obtained are compatible with other well-established models of normal and pathological personality dimensions.

Despite being the first research that aimed to cross-culturally validate the PID-5 in a Romanian sample, this study is not without limitations. First, the sample is not representative for the Romanian population. This limitation does not allow us to generalize the results of the present study. Nonetheless, given the large sample size and the fact that the data were collected in real evaluation situations, by dozens

of practicing psychologists from different regions of the country, we can estimate that the results obtained on a representative sample would be similar to those reported in the present study. However, we investigated the proprieties of the PID-5 in a community sample. Future research should also examine the psychometric properties of the Romanian version of PID-5 in a clinical sample and investigate whether the instrument discriminates between psychiatric and non-psychiatric samples. Moreover, test-retest reliability should be evaluated, as well as the construct and predictive validity. Future studies should also validate the Short and Brief versions of the PID-5 in the Romanian population. A study conducted by Bach et al. (2016) compared the three instruments in a sample of Danish adults and found that all of them have good psychometric properties. However, the Short PID more closely replicated the trait factor structure proposed in the DSM-5, whereas exploratory factor analysis of the 220-item questionnaire showed that some of the facets did not have their primary loadings on the expected domains. With respect to the hierarchical structure of the DSM-5 personality traits, future studies using the Romanian version of PID-5 should also include measures of other models of normal and pathological personality traits, seeing that conjoint analyses are useful in connecting the DSM-5 trait model with existing models of personality (Krueger &Markon, 2014).

Conclusion

In sum, the present research suggests that the Romanian version of the PID-5 is reliable and has good factorial validity, although some results were only partially convergent with previous literature. Future research should examine whether our preliminary results can be replicated in other samples of Romanian adults, as well as aim to extend these findings. Until any definitive conclusions are drawn, Romanian practicing psychologists can use the questionnaire as an auxiliary instrument in their clinical evaluation activity or in order to monitor patient progress over time. Practitioners and researchers should be mindful about the fact that the Risk Taking facet has issues regarding unidimensionality, because the direct and reverse-scored items of this scale seem to be interpreted differently. Moreover, the facets in the Disinhibition domain do not group into the same factor. Therefore, the Romanian version of the PID-5 might not be suitable for measuring these two constructs. Additionally, reverse-scoring the Rigid Perfectionism facet does not seem to be the most adequate way to assess the lack of this trait and it could potentially lead to overestimations of a person's score on this scale. Last but not least, it is important to note that the PID-5 should never be used alone when making a clinical diagnosis, but only in conjunction with the clinical interview.

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