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# Self-assessment of needs and behavior patterns at work: Psychometric properties of the Personality and Preference Inventory-Normative (PAPI-N)

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## Abstract

Along with traits, psychological needs are leading candidates to be useful units for personality research. Therefore, the usefulness of personality assessment in industrial/organizational psychology might be fostered by considering need measures specific to the workplace. The *Personality and Preferences Inventory-Normative* (PAPI-N) is a questionnaire based on Murray's need-press theory and is designed to assess needs and behavior patterns relevant to the workplace. Since PAPI-N was primarily developed for personnel selection, Study one analyzed the reliability and factorial validity of the Spanish PAPI-N on a sample of 420 job applicants. To establish the basis for using the PAPI-N in other areas of industrial/organizational psychology, Study two examined its reliability and factorial validity on a sample of 201 volunteers. Results suggest that the internal consistency of the Spanish PAPI-N is adequate in both samples, and similar to that of the original version. Factor analyses of the PAPI-N scales supported partially the factorial validity of the Spanish version by establishing five personality dimensions generalizable across samples and similar to those found in the *Personality Research Form*, a well-validated measure of Murray's needs.

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## 1. Introduction

Although cognitive ability remains the most powerful predictor of job performance (Schmidt & Hunter, 1998), over the last 15 years a series of advances demonstrating the usefulness of personality traits based on the five-factor model in predicting job performance, job satisfaction and leadership (Goodstein & Lanyon, 1999) has fostered the use of personality measures in industrial/organizational psychology. However, emphasis on traits does not preclude the study of other elements of personality. Along with traits, psychological needs are among the leading candidates to be useful units for personality research (Winter, John, Stewart, Klohnen, & Duncan, 1998). Needs are usually defined as people's goals and desires, whereas traits are defined as people's habitual patterns of cognition, affect, and behavior (Winter et al., 1998). Traits answer the question of "how" a person behaves; needs answer the question "why". Therefore, traits and needs reflect two fundamental yet different aspects of personality, and both constructs should be taken into account when considering personality in work settings. Using longitudinal data, for example, Winter et al. (1998) demonstrated in two samples that two motives (affiliation and power) and one trait (extraversion) have interactive effects on life outcomes over and above their separate individual effects.

Murray's (1938) need-press theory has been one of the most influential motivational theories in personality psychology, providing the basis for numerous instruments such as the *Personality Research Form* (PRF; Jackson, 1984). This questionnaire is a widely used and validated device for research and applied purposes, but it was not specifically designed to measure psychological needs in the workplace. Several studies suggest that the use of tests specifically designed to measure personality in work contexts increases criterion-related validity, thereby presumably increasing the utility of personality constructs in industrial/organizational psychology (Hunthausen, Truxillo, Bauer, & Hammer, 2003; Schmit, Ryan, Stierwalt, & Powell, 1995).

The PAPI-N (*Personality and Preferences Inventory-Normative*; Cubiks, 1996) is a questionnaire specifically designed to assess Murray's theory in the workplace, especially in personnel selection. The PAPI-N tries to measure the most relevant needs in the world of work (need scales) and the individual's perception of his/her usual behavior in the situations (Murray's presses) imposed by the workplace (role scales; see Feltham & Hughes, 1999, for a description of the need and role scales). Available data for the PAPI-N indicate that its psychometric properties are adequate (Feltham & Hughes, 1999; Lewis & Anderson, 1998).

## 2. Study one

Study one was aimed at developing a Spanish version of the PAPI-N and analyzing its reliability and factorial validity on a sample of job applicants. Following Murray's theory, the PAPI-N assumes that needs and roles are interrelated and form a significant personality structure. There are empirical reasons to expect that factor analyses of the 10 need and 10 role scales of the Spanish PAPI-N should show seven factors. Lewis and Anderson (1998) performed a factor analysis of the need and role scales of the English PAPI-N and obtained seven factors: Active Dominance, which integrates need to control others (P) and leadership role (L); Conscientious Persistence, which combines the roles of the organized type (C), the integrative planner (H), and attention to detail

(D), and the need for rules and supervision (W); Openness to Experience, which agglutinates the needs to finish a task (N) and for change (Z), and the conceptual thinker role (R); Sociability, which integrates the needs to belong to groups (B), to relate closely to individuals (O), and to be noticed (X), with the social harmonizer role (S); Work Tempo, which combines the roles of work pace (T) and ease in decision making (I); Agreeableness, which integrates the role of emotional restraint (E) and, inversely, the need to be forceful (K); and, finally, Seeking to Achieve, which combines the needs to achieve (A) and to be supportive (F) with the hard worker role (G).

On psychometric and empirical grounds, the PRF appears to be the most solid measure of Murray's needs. Therefore, the factor structure of the PRF could suggest alternative hypotheses about the personality factors that underlie the PAPI-N. A factorial study of the PRF using 18 samples from different nations found five factors generalizable across cultures (Stumpf, 1993): Orientation toward Work vs. Play (composed of needs for order, cognitive structure, achievement, endurance, and, inversely, of needs for impulsivity and play); Outgoing, Social Leadership (composed of needs for exhibition, affiliation, and dominance); Dependence vs. Autonomy (formed by needs for affiliation, succorance, and social recognition, and, inversely, by need for autonomy); Submissive vs. Self-protective Orientation (formed by need for abasement and, inversely, by needs for aggression and defense); and Aesthetic-Intellectual Orientation (composed by needs for sentience, change, and understanding, and, inversely, by need for harm avoidance; see Jackson, 1984, for a description of PRF scales). Reflecting the common theoretical basis in Murray's needs, PAPI-N has eight need scales in common with the PRF (X, B, O, P, K, A, N, and Z correspond to exhibition, affiliation, succorance, dominance, aggression, achievement, order, and change, respectively). Also, rational inspection suggests similarity of seven of the PAPI-N role scales to corresponding PRF scales (L, C, H, S, I, R, and G should be related to dominance, order, cognitive structure, affiliation, impulsivity, understanding, and endurance, respectively). Therefore, it may be that a five-factor structure could also be found in the PAPI-N. Thus, factor analyses would be expected to show C, H, N, A, I, and G loading on the Orientation toward Work vs. Play factor; X, B, P, S, and L on the Outgoing, Social Leadership factor; B and O on the Dependence vs. Autonomy factor; K, inversely, on the Submissive vs. Self-protective Orientation; and Z and R on the Aesthetic-Intellectual factor. In the remaining PAPI-N scales, rationally and on the basis of Lewis and Anderson's (1998) results, D, T, F, and W should load on Orientation toward Work vs. Play, whereas E should load on the Submissive vs. Self-protective Orientation.

## 2.1. Method

### 2.1.1. Participants

Participants were job applicants in a variety of sectors of the economy. The sample comprised 239 women and 181 men (age range = 20–50 years; age mean = 25.1), and most of them (87.6%) held university qualifications.

### 2.1.2. Instruments and procedure

The PAPI-N comprises 126 statements to be rated along a 7-point Likert-type scale, providing a personality profile in ten need scales and ten role scales. The Spanish PAPI-N was based on an initial translation carried out by Cubiks and applied to 93 Spanish applicants in a pilot study. We undertook a second translation and the two translations were compared to prepare a “draft” ver-

sion. The pilot study had revealed low reliability indices for 17 items; therefore, 20 new items were included in the draft version. This draft version was submitted to a back translation process by an English native professional translator, and certain minimal adjustments were then made. The resulting draft version was applied to the participants of this study during personnel selection and promotion processes. A correlation of over .30 with the total adjusted score of the scale was used as the criterion to select the final items in each scale. Thirteen items from the original English PAPI-N failed to meet this criterion and were replaced by alternatives providing better reliability indices.

## 2.2. Results

*Internal consistency reliability:* Cronbach's *alphas* for twelve PAPI-N scales (G, L, I, T, D, C, E, N, P, X, B, and F) were higher than .80, and for the remaining PAPI-N scales (H, S, A, O, Z, and W) *alphas* were higher than the standard of .70, with two exceptions: the *alpha* of R (.66) was close to the standard, but that of K was low (.41).

*Distinction between needs:* The PAPI-N presupposes the existence of 10 needs and a ten-factor solution had been already confirmed in the English PAPI (Lewis & Anderson, 1998). A principal axes analysis of scores on the 60 need items revealed 15 factors with eigenvalues greater than 1. However, the scree test indicated eight or ten factors, and an extension of Horn's parallel analysis criterion proposed by Longman, Cota, Holden, and Fekken (1989) indicated an eight-factor solution. To find out which solution was more appropriate, we followed Everett (1983) and compared rotated solutions in different subsamples to retain the solution that replicated. Thus, we randomly divided the sample into two subsamples and compared eight-, ten-, and fifteen-factors *oblimin*-rotated solutions across the two subsamples by correlation coefficients. The factor correlations across the two subsamples ranged from .42 to .89 (mean  $r = .75$ ) for the eight-factor solution, between .49 and .90 (mean  $r = .75$ ) for the ten-factor solution, and between .23 and .91 (mean  $r = .61$ ) for the fifteen-factor solution. Between the two more replicable solutions (eight- and ten-factors), the ten-factor solution was found to be more amenable to psychological interpretation since it was clearly consistent with the ten need scales of the PAPI-N. In addition, the recommendation of avoiding underextraction, even at the risk of overextraction, also supported our selection of the ten-factor solution over the eight-factor solution. In the ten-factor solution, of the 60 need scale items, 58 items exhibited their highest loadings on the factor they are intended to measure. Moreover, 49 out of the 60 need items presented a loading of over .40 on this factor, while loadings on different factors were lower than .25 in 50 out of the 60 items. The only problematic scale was K, since two of its items did not exhibit loadings of even .25 on the intended factor.

*Distinction between roles:* The PAPI-N presupposes the existence of ten roles; in fact, a ten-factor solution had been empirically confirmed in the original PAPI (Lewis & Anderson, 1998). A principal axes analysis on the scores of the 60 role items revealed 13 factors with eigenvalues greater than 1. However, both the scree test and the extension of Horn's parallel analysis criterion indicated nine factors. After randomly dividing the sample into two subsamples and comparing nine-, ten-, and thirteen-factors *oblimin*-rotated solutions across the two subsamples, we found the ten-factor solution to be the most replicable solution, with correlations ranging between .49 and .91 (mean  $r = .78$ ). In contrast, the factor correlations ranged between .18 and .89 (mean

$r = .71$ ) for the nine-factor solution, and between .02 and .94 (mean  $r = .69$ ) for the thirteen-factor solution. In addition, the ten-factor solution was found to be the more amenable to psychological interpretation since it was clearly consistent with the ten role scales of the PAPI-N. Thus, in this solution, all of the items except two exhibited their highest loadings on the factor they were intended to measure. Furthermore, 51 of the 60 items exhibited a loading of over .40 on that factor, while the loadings on other factors were less than .25 (with only one exception).

*Integration of roles and needs: The PAPI-N factors:* The theoretical and empirical reasons mentioned above suggested that factor analyses of the twenty PAPI-N scales should show seven or five factors. A principal axes analysis on the scale scores revealed six factors with eigenvalues greater than 1. Their eigenvalues (and explained variance) were: 5.46 (27.3%), 2.34 (11.7%), 1.48 (7.4%), 1.40 (7.0%), 1.16 (5.8%), and 1.01 (5.0%). However, both the scree test and the extension of Horn's parallel analysis criterion indicated four factors. To find out which solution was more appropriate, we compared four-, five-, six-, and seven-factors *varimax*-rotated solutions by factor correlations across two randomly-created subsamples. The factor correlations ranged from .56 to .91 (mean  $r = .81$ ) for the seven-factor solution, from .57 to .95 (mean  $r = .79$ ) for the six-factor solution, from .68 to .94 (mean  $r = .84$ ) for the five-factor solution, and from .62 to .96 (mean  $r = .84$ ) for the four-factor solution. Therefore, the four- and five-factor solutions appeared to be the most replicable. Between these two solutions, the five-factor solution was found to be more amenable to psychological interpretation in terms of the original factor structure of the PAPI-N and the factor structure of the PRF; in addition, the recommendation of avoiding under-extraction, even at the risk of overextraction, also supported our selection of the five-factor solution.

The five-factor solution seems to replicate four out of the seven factors originally proposed in the PAPI-N (see Table 1). Thus, the first factor obtained is Conscientious Persistence, with significant loadings for all of the relevant roles and needs (D, C, H, and W). This factor also exhibits significant loadings for N and G, but both loadings are theoretically consistent since they indicate the extent to which an individual tends to approach work responsibilities in a prescribed, fixed and persistent manner. The second factor is Active Dominance, since it shows significant loadings of L and P. This factor also shows high loadings of X and A, which could indicate that the management and leadership style denoted by P and L is oriented toward job success and requires public recognition. The fourth factor is Sociability since the only scales that show a loading of over .40 on this factor are O, B, and S, three of the four scales that a priori defined Sociability. The fifth factor is Agreeableness, since the only two scales with high loadings on this factor are E and, inversely, K. Concerning the remaining factors originally proposed in the PAPI-N, Work Tempo and Openness to Experience combine in one factor (the Work Tempo–Openness factor in Table 1), since the highest loadings correspond to these scales (I, T, Z, and R), whereas Seeking to Achieve is not recoverable in this Spanish sample since its scales (G, F, and A) load on factors defined by other scales.

Interestingly, this five-factor solution is also consistent with the factor structure of the PRF. The first factor could be interpreted as Orientation toward Work vs. Play, since, as hypothesized, C, H, N, G, W, and D have significant loadings. The second factor seems to be Outgoing, Social Leadership, since it shows significant loadings of L, X, and P. The third factor could be interpreted as Aesthetic-Intellectual Orientation, as Z and R load significantly. The fourth factor seems to be Dependency vs. Autonomy, since B and O show significant loadings. Finally, the fifth factor

Table 1

Factor analyses of the PAPI-N scales (five-factor *varimax*-rotated matrix after principal axis extraction) in the applicant (AS;  $N = 420$ ) and volunteer (VS;  $N = 201$ ) samples

	Conscientious Persistence		Active Dominance		Work Tempo–Openness		Sociability		Agreeableness	
	AS	VS	AS	VS	AS	VS	AS	VS	AS	VS
N – Need to finish a task	<b>.71</b>	<b>.76</b>			.24	.26		.21		
C – Organized type	<b>.68</b>	<b>.70</b>								
D – Attention to detail	<b>.65</b>	<b>.65</b>			.27					
G – Role of the hard worker	<b>.61</b>	<b>.72</b>			.28					
W – Need for rules and supervision	<b>.60</b>	<b>.62</b>				–.28	.28	.24		
F – Need to be supportive	<b>.48</b>	<b>.42</b>	.25	.23			.25	<b>.44</b>		
H – Integrative planner	<b>.42</b>	<b>.70</b>								
P – Need to control others			<b>.80</b>	<b>.74</b>	.20	.32				
X – Need to be noticed			<b>.74</b>	<b>.74</b>				.29		
L – Leadership role			<b>.65</b>	<b>.61</b>	<b>.41</b>	<b>.49</b>		.21	.21	
A – Need to achieve	.28	.22	<b>.55</b>	<b>.56</b>						
I – Ease in decision making				.32	<b>.69</b>	<b>.61</b>				
T – Work pace	.25	<b>.40</b>			<b>.54</b>	<b>.57</b>				
Z – Need for change	.27				<b>.49</b>	.39	.21	.22		–.38
R – Conceptual thinker			.25		<b>.46</b>	<b>.40</b>				–.21
O – Need to relate closely to individuals		.38					<b>.65</b>	<b>.70</b>		–.28
B – Need to belong to groups	.22	.21					<b>.51</b>	<b>.69</b>		
S – Social harmonizer	.37		.25		.28	.32	<b>.43</b>	<b>.63</b>		
K – Need to be forceful			.27	.25	.20	.21			–.57	–.58
E – Emotional restraint								–.22	<b>.55</b>	<b>.49</b>

Note: Loadings < |.20| have been omitted; loadings of |.40| or above are shown in boldface.

seems to be Submissive vs. Self-protective Orientation, since the only two scales with high loadings on this factor are E and, inversely, K.

### 2.3. Discussion

Our results indicate that the Spanish PAPI-N exhibits good internal consistency indices. Not only do 18 out of the 20 scales exhibit *alphas* that are above the standard of .70, but also the *alphas* are higher than .80 for 12 scales. These results are similar to findings obtained with the English PAPI-N (all 20 scales with *alphas* exceeding .70, 14 of them with *alphas* of above .80; Lewis & Anderson, 1998). Despite the adequate internal consistency of the K scale in the English PAPI-N, however, this scale exhibits indices below .70 in our Spanish sample and in other countries (*alpha* = .66, .52, and .48, for adaptations of Sweden, Hong Kong, and Finland, respectively; data not published, communicated by Cubiks, 2001). In view of the generalization of those low reliability indices, it may be that they are a consequence of cultural differences inherent in the type of behavior patterns that, in each country, are related with the need to be outspoken and direct with people and to aggressively push for what the individual wants.

In line with the results obtained for the English PAPI-N, the present study partially supports the factorial validity of the Spanish PAPI-N in distinguishing between ten different psychological needs and ten behavior patterns or roles. Consistently with the reliability problems encountered, K was the PAPI-N scale that exhibited the worst validity indices. In light of both problems and subject to further research, it would be advisable for the users of the Spanish PAPI-N to take a highly cautious stance toward the assessment of inter- or intra-individual differences in K.

Concerning validity to identify the relationships between needs and behavior patterns, factor analyses revealed that a four-factor structure or five-factor structure were the most replicable solutions across subsamples, the latter being the most readily interpretable, and presumably representing better the underlying structure of the PAPI-N in our Spanish sample. This five-factor solution replicates four out of the seven dimensions proposed in the English PAPI-N and combines other two dimensions in one factor, providing partial support for the factorial validity of the Spanish version. Interestingly, this support is greater when that five-factor solution is compared with the factor structure of the most solid questionnaire measure of Murray's needs, the PRF, since the five PAPI-N factors show strong similarities to the five PRF factors found by Stumpf (1993) with large samples and across various cultures. Despite differences in scale construction strategies, frame of reference of items ("at work" vs. in general) and assessment of additional personality constructs, the factor structure of the Spanish PAPI-N could be alternatively interpreted as representing the five dimensions found in the PRF. In fact, although the loadings of N and G on Conscientious Persistence and the loading of X on Active Dominance were not expected from the factor structure of the English PAPI-N, they are consistent with an interpretation of those factors as Orientation toward Work vs. Play and Outgoing, Social Leadership, respectively. Therefore, the unexpected loadings provide additional support for the factorial validity of the Spanish PAPI-N by placing these factors better in the fairly generalizable and validated context of the factor structure of the PRF.

Overall, our results suggest that the Spanish PAPI-N has adequate reliability and factorial validity indices to measure individual differences in psychological needs and behavior patterns among persons assessed during personnel selection and promotion processes. However, the lack

of information about the psychometric properties of the Spanish PAPI-N in other contexts limits the range of its potential applications in other areas of industrial/organizational psychology for both applied and research purposes. To address this limitation, we carried out Study two.

### 3. Study two

The bulk of empirical data supporting research and professional applications of personality measures in many areas of industrial/organizational psychology have been obtained with samples of working people and university students assessed under conditions of voluntary testing. Research also indicates that distortion occurs in applicant settings and, consequently, volunteers' and applicants' personality scores differ significantly and, sometimes, validity indices also differ (Hough, 1998). Therefore, personality questionnaires originally developed in volunteers may show poorer psychometric properties in applicants (e.g., Schmit & Ryan, 1993; but see Ellingson, Smith, & Sackett, 2001, for contrary results). Logically, the reverse may also be true: personality tests originally developed in applicants may not necessarily show acceptable psychometric indices in volunteers. Study two was aimed at examining the reliability and factorial validity of the Spanish PAPI-N in volunteers.

#### 3.1. Method

##### 3.1.1. Participants and procedure

A first volunteer sample of 91 participants (60% females; age range = 19–55 years; age mean = 33.3) was recruited by a “snowball” technique in which psychology students invited working relatives to participate. A second sample was composed of 110 psychology undergraduates (86.4% females; age range = 19–30 years; age mean = 20.9). Most (65.4%) had a job or had worked at some time. For the university students, certain PAPI-N items and instructions were modified to inquire how the participants would describe themselves as workers or as students.

#### 3.2. Results

ANCOVAs were performed to test the differences between the applicant sample of Study one and the working adult sample in the PAPI-N scores adjusted for age and sex. Considering a Bonferroni adjusted level of significance (.05/20 comparisons), the results of the ANCOVAs revealed significant differences in 11 scales: W, Z, N, B, F, C, H, D, S, E, and G. For each of these scales, the applicant group had the highest observed mean, with effect sizes ( $d$ ) ranged from .30 to .66 (mean = .45). ANCOVAs were also performed to test the differences between the applicant and the university student samples in the PAPI-N scores adjusted for age and sex. Significant differences ( $p < .002$ ) were found in 15 scales: P, W, Z, N, B, K, F, L, C, H, D, I, T, E, and G. Applicants also had the highest observed mean in each of these scales except K (applicants lower), with effect sizes ranged from .38 to .90 (mean = .52).

In both volunteer samples, *alphas* for eleven PAPI-N scales (G, L, I, T, H, D, C, N, X, B, and F) were higher than .80, and for the remaining PAPI-N scales (E, P, O, Z, and W) were higher than the standard of .70, with the exception of four scales: R, S, A, and K. The *alphas* of the

R, S, and A scales were not far from the standard (.68/.69, .70/.69, and .67/.81, respectively, for the work adult/university student samples), however the *alphas* of the K scale were low in both samples (.48/.59).

Given the small size of both samples, they were combined and factor analyses were carried out on scale scores, but not on item scores. A principal axes analysis revealed five factors with eigenvalues greater than 1. These eigenvalues (and the explained variance) were: 5.53 (27.7%), 3.02 (15.1%), 1.88 (9.4%), 1.35 (6.7%), and 1.11 (5.5%). However, the scree test indicated three or four factors, and the extension of Horn's parallel analysis criterion suggested three factors. Therefore, the five-, four-, and three-factor solutions were rotated using *varimax*, and the rotated five-factor solution was found to be the more amenable to psychological interpretation since it replicated almost perfectly the solution obtained in the applicant sample (see Table 1). Thus, correlations calculated to quantify the degree of convergence between both solutions exceeded the standard of .75 for all the five factors: Conscientious Persistence (.92), Active Dominance (.94), Work Tempo–Openness (.90), Sociability (.94), and Agreeableness (.85), averaging .91. Since statistical criteria also suggested three- or four-factor solutions and, in fact, those criteria had also supported four factors in the applicant sample of Study one, we also calculated the correlations of the three- and four-factor solutions found in volunteers with those found in applicants. These correlations ranged from .48 to .86, and averaged .72, for the three-factor solution, and ranged from .66 to .91, and averaged .84, for the four-factor solution, and, therefore, they also suggested that the five-factor solution was the most generalizable and appropriate.

### 3.3. Discussion

Previous research has found practically significant mean differences between applicants and volunteers on personality scale scores (Hough, 1998). Consistently, our results suggest that moderately large differences exist in most PAPI-N scales between applicants and volunteers, no matter whether volunteers are working adults or university students. Despite these differences and the fact that the Spanish PAPI-N was developed in an applicant sample, our results also suggest that the reliability and factorial validity indices of the Spanish PAPI-N are adequate in volunteer samples and similar to those obtained in applicants. Thus, in both volunteer samples, not only do 17 out of the 20 scales exhibit *alpha* coefficients that are above the standard of .70, but also the coefficients are higher than .80 for 12–15 scales. In terms of factorial validity, the results of factor analyses show that the five-factor structure found in the applicant sample remains intact for the combined sample of volunteers, with all the PAPI-N scales loading on the intended factors. Furthermore, congruence coefficients between the applicant and volunteer samples also support the stability of the five-factor structure in voluntary testing settings.

## 4. Conclusions

Along with traits, psychological needs are among the leading candidates to be useful units for personality research. Therefore, the usefulness of personality assessment in industrial/organizational settings might be fostered by considering tests specifically designed to measure needs in the workplace such as the PAPI-N. The results of our two studies suggest that the Spanish

PAPI-N exhibits adequate reliability and factorial validity indices, not only in applicants, but also in volunteers. In addition, inasmuch as the five-factor structure of the Spanish PAPI-N is interpretable in terms of the highly generalizable five-factor structure of the PRF, our results suggest the existence of fundamental dimensions underlying psychological needs, at least underlying Murray's need list. These dimensions appear to be identifiable across instruments (PAPI-N and PRF), across testing situations (voluntary and applicant settings), and across nations (Spain and the nations examined by Stumpf (1993)). Although this observation is based only on informal comparison (by inspection of similarities), we believe it merits further research through, for example, joint factor analysis of different tests designed to measure needs based on Murray's theory (e.g., PAPI-N and PRF) or based on other theories.

Although the reliability and factorial validity indices of the Spanish PAPI-N are initially adequate to measure individual differences in needs and behavior patterns relevant in the work setting, and across different testing purposes, the validation of any psychometric device involves a process of ongoing research, and its use in applied contexts should be based on relevant criterion-related validity studies. Future research on the Spanish PAPI-N should examine its temporal stability, its convergent validity with other tests, and, especially, its predictive validity for criteria relevant to personnel selection and to other areas of industrial/organizational psychology.

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