



# **Personality and Leadership The Short-Form Revised Eysenck Personality Questionnaire: A Greek Edition (EPQ-RS-GR)**

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## **Abstract**

A number of studies have linked personality variables and other stable personal traits to leader effectiveness, giving a solid empirical foundation for the claim that qualities are important in the prediction of leader effectiveness. Instruments for the assessment of the Eysenck's factors of personality, psychoticism (P), extraversion (E), and neuroticism (N), were developed over the course of almost 50 years. The aim of the present study was to evaluate the reliability of the Eysenck Personality Questionnaire-Revised Short Scale (EPQ-RS) in a Greek sample. The EPQ-RS is a 48-self-report questionnaire to assess the dimensions of personality, neuroticism, extraversion, psychoticism, while also including a lie scale. The sample consisted of 332 individuals (166 males, 166 females), undergraduate university students in Business Administration. The findings support the psychometric properties of the extraversion, neuroticism and lie scale. The psychoticism scale, however, was found to be less satisfactory.

**JEL Classification:** L20, C18, M12

**Keywords:** EPQ-R S, Extraversion, Neuroticism, Psychoticism, PEN model, Leadership

## **1. Introduction**

The idea of personality traits seems to be as old as human language itself. In the “Nicomachean Ethics” (Aristotelis De Moribus ad Nicomachum), written in the fourth century BC, Aristotle (384-322BC) viewed dispositions such as vanity, modesty and cowardice as key determinants of moral and immoral behavior (Matthews, Deary & Whiteman, 2003). He initially distinguished between two kinds of virtue, the mental and the moral. He stated that the former becomes the property of the people through teaching, and that is the reason why it takes experience and time. The latter, on the other hand, is the result of habit and repetition (addiction) and is therefore not innate but acquired. To logically support his position, he used two empirical examples, stone and fire: He observed that the former always moves downwards, while the latter moves upwards; this is something that cannot be altered because this movement obeys the laws of nature. Specifically, he supported that nature endows man with certain predispositions, and it is then for him to develop and promote them in actions. To substantiate his theoretical approach, he presented an empirical example, that of the human senses. In particular, he claimed that sight and hearing pre-exist birth and are activated by using them

during our lifetime. Traits are at the centre stage in the scientific study of human personality because “if there is to be a speciality called personality its unique and therefore defining characteristic is traits” (Buss,1989).

## **2. Trait-based perspectives of leadership**

The great Victorian era historian Thomas Carlyle (1907) commented that “the history of the world was the biography of great men” (p.18). This “great man” hypothesis—that history is shaped by the forces of extraordinary leadership—gave rise to the trait theory of leadership. Trait theory, like the great man theory, assumed that leadership was based on the leader’s personal attributes, but unlike the great man theory, it did not necessarily presume that leadership was limited to a few heroic men (Judge, Bono, Ilies, & Gerhardt, 2002). Terman’s (1904) work is one of the earliest in applied psychology on trait theory; subsequent studies of the trait approach followed in the 1920s (e.g., Bowden, 1926; Kohs & Irle, 1920). Cowley (1931) summarized well the view of trait theorists in remarking that “the approach to the study of leadership has usually been and perhaps must always be through the study of traits” (p. 144).

Contemporary views of traits are intimately related to the processes of measurement and assessment necessary to identify basic personality dimensions. Bass (1990), in his review, indicated that almost all studies on the relationship of self-confidence—indicating low neuroticism—to leadership “were uniformed in the positive direction of their findings” (p. 69). Hill and Ritchie (1977) suggested that self-esteem—another indicator of low neuroticism (Eysenck, 1990)—is predictive of leadership: “It appears that there is convincing evidence for the inclusion of self-esteem as an important trait of both superior and subordinate in analyzing leadership effectiveness” (p. 499). Evidence also indicates that neurotic individuals are less likely to be perceived as leaders (Hogan et.al., 1994).

Some research suggest that extraverts should be more likely to emerge as leaders in groups. Extraversion is strongly related to social leadership (Costa & McCrae, 1988) and, according to Watson and Clark (1997) to leader emergence in groups. Hogan et al. (1994) noted that extraversion is related to being perceived as leaderlike. Extraverts tend to be energetic, lively people. Kirkpatrick and Locke (1991) commented, “Leaders are more likely than non-leaders to have a high level of energy and stamina and to be generally active, lively, and often restless” (p. 50). Active, aggressive, enthusiastic, which are characteristics of extraverts and not silent or withdrawn were some of the adjectives used to describe persons who emerged as leaders (Gough, 1988). Indeed, Gough (1990), found that both of the major facets of extraversion—dominance and sociability—were related to self and peer ratings of leadership.

The first decades of scientific leadership research were dominated by trait approaches. They were later mocked for their inability to distinguish between leaders and non-leaders and for failing to account for situational variation in leadership behavior (Zaccaro, 2004). The literature is replete with trait-by-situation leadership models, the most popular of which is Fiedler’s contingency model (Fiedler 1964, Fiedler 1971; Fiedler & Garcia, 1987). Individuals with certain abilities and skills can be effective leaders in some situations, but not in others that need vastly different knowledge and technical expertise. However, general or cross-situational traits are likely to operate as precursor to the development and attainment of specific abilities and competence.

As Zaccaro (2007), pointed: “Combinations of traits and attributes, integrated in conceptually meaningful ways, are more likely to predict leadership than are independent contributions of multiple traits. Dominant leader trait patterns are likely to be those that reflect an individual’s

stable tendency to lead in different ways across disparate organizational domains. Finally, some leader traits have more distal influences on leadership processes and performance, whereas others have more immediate effects that are integrated with and influenced by situational parameters”(p.14).

Building a successful company is a leadership challenge. What do people who establish and manage successful teams and organizations do? This is a subject that many leadership researchers strive to address (Hogan & Judge, 2013). Perhaps future research, combined with methodological and statistical advancements will spark a resurgence in the study of leadership attributes, and get a step closer to the foundation for the qualities of outstanding leaders.

### **3. Eysenck instruments for the assessment of personality**

Eysenck developed the theoretical framework and contributed to the empirical foundations supporting the dimensional structure of personality defined by three “super factors”: extraversion, neuroticism, and psychoticism (PEN). This important contribution to the study of personality and individual differences was complimented with a series of scales that underwent modifications to both their theoretical structure and item content and were expanded for use in a number of countries and also across a wide age range (Eysenck et.al., 2021).

As originally conceived, Eysenck’s dimensional model of personality identified two orthogonal factors labelled introversion–extraversion and stability–neuroticism (Lewis, Shevlin & Forrest, 2002). The third orthogonal factor was subsequently added and labeled normality–psychoticism, or alternatively tendermindedness–toughmindedness (Eysenck et.al.,1985). Some studies included the lie scale as a fourth factor although its purpose was to assess dissimulation.

As the extraversion dimension represents sociality and impulsivity, individuals in this dimension were defined as enjoying social interactions, energetic, and preferring social situations to loneliness. It was proposed that the neuroticism dimension indicated emotional instability and reactivity, and that individuals who score high on this dimension tend to be anxious, depressive, overly emotional, shy, and have low self-esteem. The psychoticism dimension highlights personality characteristics, such as being distant, cold, insensitive, absurd, and unable to empathize with others (Eysenck& Eysenck, 1975).

Since the development of Eysenck personality theory, various measures were developed in order to assess the various personality traits. The early Maudsley Medical Questionnaire (MMQ) contains 40 items (Eysenck, 1952), the Maudsley Personality Inventory (MPI) contains 48 items (Eysenck, 1959), the Eysenck Personality Inventory (EPI) contains 57 items (Eysenck & Eysenck, 1964), the Eysenck Personality Questionnaire (EPQ) contains 90 items (Eysenck & Eysenck, 1975) and the Revised Eysenck Personality Questionnaire (EPQ-R) contains 100 items (Eysenck, Eysenck& Barrett, 1985). One of the consequences of this process has been a progressive increase in their length. This increase in length can be accounted for by the introduction of an additional dimension of personality within Eysenck’s scheme (Eysenck& Eysenck, 1976) and by the psychometric principle that greater length enhances reliability (Lord& Novick, 1968).

There are, however, some practical disadvantages in long tests (the psychometric disadvantages of short tests have been outlined by Smith, McCarthy, & Anderson, 2000). While adding a personality test to a research study may be advantageous in some situations, adding another 90 or 100 items to the overall questionnaire would make it excessively long. In fact, researchers

who seek to investigate personality traits confront challenges in parallel to leadership questionnaires, an area that is frequently studied in management studies, due to the size and time required to apply these questionnaires. This fact was the trigger of the present research.

As a result of these technical difficulties in addition to full-scale indices, there has long been a practice of generating shorter indices. Eysenck, Eysenck & Barrett (1985) devised a short form of the Revised Eysenck Personality Questionnaire (EPQ-RS) for use among adults. In this form the four indices of extraversion, neuroticism, psychoticism and the lie scale each contain 12 items. They reported reliabilities of 0.84 and 0.80 for neuroticism, 0.88 and 0.84 for extraversion, 0.62 and 0.61 for psychoticism, and 0.77 and 0.73 for the lie scale for males and females, respectively. The EPQ-RS has been used widely, including studies by Aleixo & Norris (2000), Blagrove & Akehurst (2001), Chan & Joseph (2000), Chivers & Blagrove (1999), Creed, Muller & Machin (2001), Francis (1999), Francis & Wilcox (1998), Glicksohn & Bozna (2000), Glicksohn & Golan (2001), Halamandaris & Power (1999), Linton & Wiener (2001), Martin & Kirkaldy (1998), and Robbins, Francis & Rutledge (1997).

An important part of the validation of any trait-based model of personality and its associated measurement instrument is to investigate its applicability to other cultures. In a cross-cultural study, Francis, Brown & Philipchalk (1992) compared the psychometric properties of the EPQ-RS in four English-speaking countries among a total of 685 undergraduate students, including 59 men and 153 women in England, 57 men and 92 women in Canada, 51 men and 81 women in the USA and 53 men and 139 women in Australia. According to this study the extraversion scale achieved alpha coefficients of 0.78, 0.83, 0.85 and 0.87 in the four samples and the neuroticism scale achieved alpha coefficients of 0.79, 0.80, 0.81 and 0.83 in the four samples, respectively. The lie scale performed less well than the extraversion and neuroticism dimensions but proved to be adequate. The short form lie scale achieved alpha coefficients of 0.65, 0.66, 0.70 and 0.71. However, for the psychoticism scale, alpha coefficients were low (0.33-0.52). In the study of Alexopoulos & Kalaitzidis (2004) with a sample of 946 individuals in Greece, the internal consistency reliabilities, were 0.78 for extraversion, 0.73 for neuroticism, and 0.47 for psychoticism and 0.69 for lie scale, respectively.

While the EPI, EPQ and EPQ-R were originally developed in England and then extended to other English-speaking areas, the cross-cultural extension of this field of personality research quickly led to the translation and testing of the instruments in non-English speaking environments (Barrett & Eysenck, 1984; Eysenck & Eysenck, 1983). For example, Francis et al., (2006), have developed the German edition of the EPQ-RS. Similarly, Ivkovic et al. (2007), have developed and examined the psychometric properties the Croatian edition of the EPQ-RS. Also Tiwari et. al., (2009), examined the psychometric properties of the Hindi edition while other researchers (Katz & Francis, 2000; Lewis et al., 2002, Karanci, et. al., 2007, Tiwari et. al., 2009, Roy, 2012) examined the psychometric properties in other populations with different languages.

The EPQ-RS was chosen to be translated/adapted for the Greek population because: (a) it is based on a well-grounded theory of personality, the theory of Eysenck, (b) it is a short version of a well-known and widely used scale, EPQ and EPQ-R, and therefore is especially useful for research purposes, (c) it is a result of long-lasting scientific experience. The Eysenck Personality Questionnaire-Adult (EPQ-A) was standardized for the Greek population by Demetriou (1986). Furthermore, in contrast to the extensive amount of literature on the EPI, EPQ and EPQ-R, it seems that little research had been conducted to assess the usefulness of the EPQ-RS in different countries.

The aim of the present study was to examine the psychometric properties of the Greek translation of the EPQ-RS.

## **4. Method**

### **4.1 Sample**

The sample consisted of 332 individuals, (166 males and 166 females), undergraduate students, attending the University of Piraeus in Business Administration Department, who completed the Greek translation of the EPQ-RS. They were randomly recruited among first year students. The mean age was 19.4 and the standard deviation 1.4.

### **4.2 Measures**

The Eysenck Personality Questionnaire-Revised Short Scale (EPQ-R Short Scale) is a self-report questionnaire used to assess three dimensions of personality, neuroticism (stability/emotionality), extraversion (extraversion/introversion) and psychoticism, for adults. It also includes a lie scale for the revelation of falsehoods. It consists from 48 items, 12 for each of the traits of neuroticism, extraversion, and psychoticism, and 12 for the lie scale. Each question has a binary response, “yes” or “no”. Each dichotomous item was scored 0 or 1, and each scale had a minimum score of 0 and a maximum score of 12.

### **4.3 Procedure**

For the present study the questionnaire was translated into Greek by a bilingual Greek national and then back-translated into English by a second bilingual Greek national in order to test for inaccuracies and ambiguities. Where the retranslated English version contained inconsistencies, both translators were consulted to determine the appropriate solution. This content-based verification provided clear support for scoring the neuroticism, extraversion and lie scale items as suggested by Eysenck et al. (1985). After the content-based analysis the Greek version of EPQ-RS (here after referred as EPQ-RS-GR) it was administered on the participants (N=332) in order to examine its psychometric properties.

### **4.4 Statistical analysis**

The data was analyzed by the SPSS statistical package, (SPSS Statistics 26.0 ).The internal consistency of the four subscales of EPQ-RS-GR was calculated using Cronbach’s alpha method (Cronbach, 1951).

## **5. Results**

Table 1 presents the item rest of test correlations for each of the four scales of the EPQ-RS-GR, extraversion, neuroticism, psychoticism and the lie scale. The following alpha coefficients (Cronbach, 1951) were reported for the four scales: extraversion, 0.7153; neuroticism, 0.8129; psychoticism, 0.5114; lie scale, 0.6611. The results of item rest of test correlations ranged from 0.336 to 0.615 for extraversion, from 0.429 to 0.617 for neuroticism, from 0.248 to 0.616 for lie scale and from 0.298 to 0.519 for psychoticism subscale of EPQ –RS-GR.

**Table 1**

Results of item rest of test correlations analysis for the four subscales of the EPQ-RS-GR

	r
<i>Extraversion</i>	
3 Are you a talkative person?	0.488
7 Are you rather lively?	0.487
11 Do you enjoy meeting new people?	0.360
15 Can you usually let yourself go and enjoy yourself at a lively party?	0.525
19 Do you usually take the initiative in making new friends?	0.564
23 Can you easily get some life into a rather dull party?	0.547
27 Do you tend to keep in the background on social occasions?	0.497
32 Do you like mixing with people?	0.369
36 Do you like plenty of bustle and excitement around you?	0.336
41 Are you mostly quiet when you are with other people?	0.515
44 Do other people think of you as being very lively?	0.604
48 Can you get a party going?	0.615
<i>Neuroticism</i>	
1 Does your mood often go up and down?	0.597
5 Do you ever feel 'just miserable' for no reason?	0.617
9 Are you an irritable person	0.558
13 Are your feelings easily hurt?	0.535
17 Do you often feel 'fed-up'?	0.583
21 Would you call yourself a nervous person?	0.611
25 Are you a worrier?	0.507
30 Would you call yourself tense or 'highly strung'?	0.429
34 Do you worry too long after an embarrassing experience?	0.535
38 Do you suffer from 'nerves'?	0.584
42 Do you often feel lonely?	0.604
46 Are you often troubled about feelings of guilt?	0.565
<i>Lie scale</i>	
4 If you say you will do something, do you always keep your promise no matter how inconvenient it might be?	0.248
8 Were you ever greedy by helping yourself to more than your share of anything?	0.475
12 Have you every blamed someone for doing something you knew was really your fault?	0.497
16 Are all your habits good and desirable ones?	0.446
20 Have you ever taken anything (even a pin or button) that belonged to someone else?	0.506
24 Have you ever broken or lost something belonging to someone else?	0.519
29 Have you ever said anything bad or nasty about anyone?	0.472
3 As a child were you every cheeky to your parents?	0.376
37 Have you ever cheated at a game?	0.554
40 Have you ever taken advantage of someone?	0.616
45 Do you always practice what you preach?	0.485
47 Do you sometimes put off until tomorrow what you ought to do today?	0.439

<i>Psychoticism</i>	
2 Do you take much notice of what people think?	0.381
6 Would being in debt worry you?	0.329
10 Would you take drugs which may have strange or dangerous effects?	0.519
14 Do you prefer to go your own way rather than act by the rules?	0.349
18 Do good manners and cleanliness matter much to you?	0.442
22 Do you think marriage is old-fashioned and should be done away with?	0.436
26 Do you enjoy co-operating with others?	0.333
28 Does it worry you if you know there are mistakes in your work?	0.404
31 Do you think people spend too much time safeguarding their future with savings and insurance?	0.298
35 Do you try not to be rude to people?	0.494
39 Would you like other people to be afraid of you?	0.465
43 Is it better to follow society's rules than go your own way?	0.395

**Table 2**  
Factor correlation of the of the EPQ-RS-GR

	1	2	3	4
EXTRAVERSION	-			
NEUROTICISM	-,251**	-		
PSYCHOTICISM	-,109*	-,007	-	
LIE SCALE	-,002	-,235**	-,212**	-

\*\* . Correlation is significant at the 0.01 level, (2-tailed) \* . Correlation is significant at the 0.05 level (2-tailed)  
n=332

Table 2 presents the correlation coefficients between the four subscales. The factor correlations show a significant negative correlation between neuroticism and extraversion. There were also significant negative correlations between neuroticism and the lie scale and psychoticism and the lie scale, as well as between extraversion and psychoticism. These results are consistent with the findings of Alexopoulos & Kalaitzidis (2004) and Lewis et.al.,(2002).

## 6. Discussion

The present study was aimed to evaluate the internal consistency of the Greek version of the EPQ-RS. Both the extraversion and the neuroticism scales of the EPQ-RS-GR achieved satisfactory alpha coefficients well in excess of 0.7, the level recommended by Kline (1993). The lie scale with an alpha coefficient of 0.6611 is considered close in regard to Kline's criterion of 0.7. The psychoticism scale, however, performed moderately with an alpha coefficient of 0.5114.

When evaluated in general, it can be proposed that due to satisfactory internal consistency scores, the EPQ-RS-GR is a reliable scale for the measurement of various personality traits. With regards to low internal consistency coefficients for the psychoticism subscale, various

studies conducted in other countries also identified similar results (Francis et al., 1992, 2006; Ivkovic et al., 2007; Katz and Francis, 2000; Lewis et al., 2002 Karanci, et. al.,2007, Tiwari et. al.,2009, Roy, 2012 ) and is therefore not likely to be attributable to the translation.

However, researchers should be cognizant about the relative low reliability of the psychoticism subscale as correlations with other external variables are likely to be attenuated due to the effect of measurement error. Any developments to improve the psychometric properties of this component of the EPQ-RS should therefore be incorporated into the Greek version.

Those findings can be an inherent limitation as well as a distinctive contribution. Although similar results under different conditions illustrate the robustness of the finding, several results may be attributable to culture specific characteristics, Generalizability of the empirical evidence from the current study's Greek sample should be validated across other heterogeneous samples and various work-settings in different national cultures.

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