AN INTERBATTERY FACTOR ANALYSIS OF THE EMOTIONAL QUOTIENT INVENTORY & THE WORK PERSONALITY INDEX®

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Studies investigating the relationship between personality and mixed model EI have reported substantial overlap between the constructs (Brackett & Mayer, 2003; Dawda & Hart, 2000; Matthews, Zeidner, & Roberts, 2002). Given strong conceptual overlap, EI is not expected to offer much incremental validity over and above personality. By contrast, meta-analytic studies have consistently reported substantial incremental validity for EI (Joseph & Newman, 2010; O'Boyle et al., 2010). This research may therefore indicate somewhat paradoxical findings.

Researchers such as Petrides and Furnham (2001) have indeed argued that mixed model EI is embedded in personality, but distinct from major personality taxonomies like the three-factor structure (Eysenck & Eysenck, 1975) or the Big Five (Costa & McCrae, 1992) factors of personality. By using joint factor analysis they identified an oblique trait EI factor in Eysenckian and Big Five factor space (Petrides, Pita, & Kokkinaki, 2007). This suggests that EI is a compound but distinct aspect within the realm of personality.

However, the use of joint factor analysis in these studies might be somewhat problematic. This is because the use of joint factor analysis across two variable sets tends to produce factors which are likely to include method artefacts (Brown, 2007). In other words, factors that emerge from such analyses tend to be the result of the employed technique, rather than the result of actual relationships among the variables (Brown, 2007).

OBJECTIVE

The purpose of the study is to investigate the relationship between EI and personality by means of an interbattery factor analysis conducted with the scales of the Emotional Quotient Inventory (EQi) and Work Personality Index® (WPI).

METHOD

Both the EQi and the Work Personality Index were completed by 615 South Africans from January 2007 to January 2010. There were 382 men and 233 women in the study. Respondent's ages ranged between 19 years and 68 years. The average age for men was 34.84 (SD = 9.14) and the average for women was 32.85 (SD = 8.79).

MEASURES

The EQi measures an array of emotional and social skills related to an individual's ability to succeed in coping with environmental demands. It contains 133 items with five-point Likert response options that takes about 30-40 minutes to complete. The assessment comprises five composite scales including Intrapersonal, Interpersonal, Adaptability, Stress Management, and General Mood. The composite scales each contain a number of facet scales. These facet scales were the input variables in the analysis and are listed in Table 1.

The Work Personality Index is an inventory designed to identify personality traits that directly relate to work performance. The Work Personality Index assessment consist of 17 primary scales that measure five global constructs. The five constructs are labelled Achievement Orientation, Conscientiousness, Social Orientation, Practical Intelligence and Adjustment. Each of these constructs is subdivided into two to five of the primary scales which allows for a finer level of assessment of the five constructs. These primary scales were included in the analysis and are listed in Table 1. The Cronbach alpha internal consistency reliability coefficients for each of the scales are also reported in the Table 1.

TABLE 1 CRONBACH ALPHA COEFFICIENTS FOR EACH OF THE SCALES ON THE EQI AND WPI

EMOTIONAL QUOTIENT INVENTORY	α	WORK PERSONALITY INDEX®	α
Emotional self-awareness	.78	Attention to detail	.74
Assertiveness	.77	Rule-Following	.83
Self-Regard	.86	Dependability	.77
Self-Actualisation	.76	Teamwork	.73
Independence	.70	Concern for Others	.78
Empathy	.72	Outgoing	.70
Interpersonal Relationships	.80	Ambition	.70
Social Responsibility	.69	Initiative	.72
Problem Solving	.75	Flexibility	.74
Reality Testing	.74	Energy	.79
Flexibility	.74	Leadership	.81
Stress Tolerance	.79	Persistence	.78
Impulse Control	.77	Democratic	.55
Happiness	.76	Innovation	.80
Optimism	.70	Analytical Thinking	.70
		Self-Control	.79
		Stress Tolerance	.81

STATISTICAL ANALYSIS

Interbattery factor analysis was used to investigate the relationship between EI and personality. This method allows for the identification of common factors between two variable sets. According to Cudeck (1982) "the method is principally designed to explore similarities between the batteries, and de-emphasizes unique elements of either set". (p. 54).

What sets interbattery factor analysis apart from joint factor analysis, is that it accounts for the possibility of method artefacts (de Bruin, 2000; Brown, 2007). In joint factor analysis, only the within-battery sub-matrices from each variable set are used in the analysis, and the between-battery sub-matrices are ignored (Brown, 2007). Thus, joint factor analysis only makes use of the within-battery information located in a correlation matrix as indicated by quadrants one and four of Figure 1, whereas interbattery factor analysis makes use of only the between-battery information located in quadrants two and three. Browne's (1979) maximum-likelihood interbattery factor analysis was used in this study.

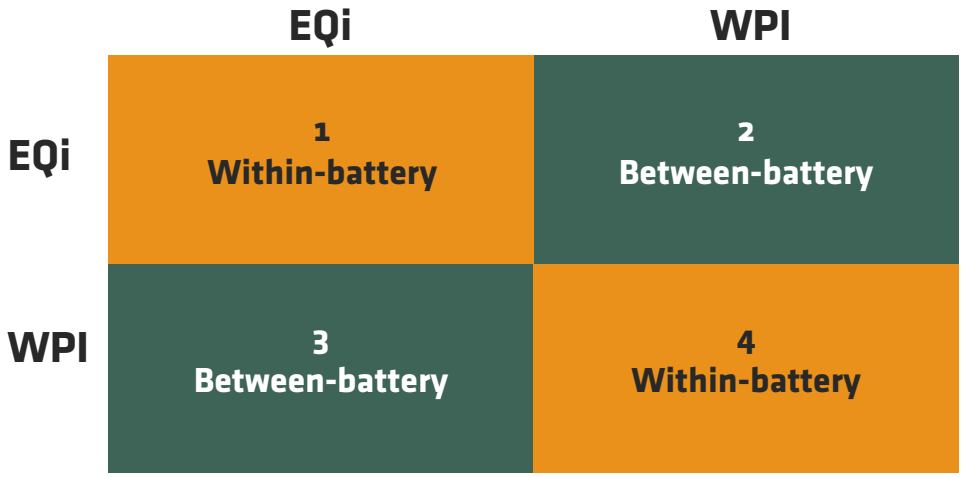
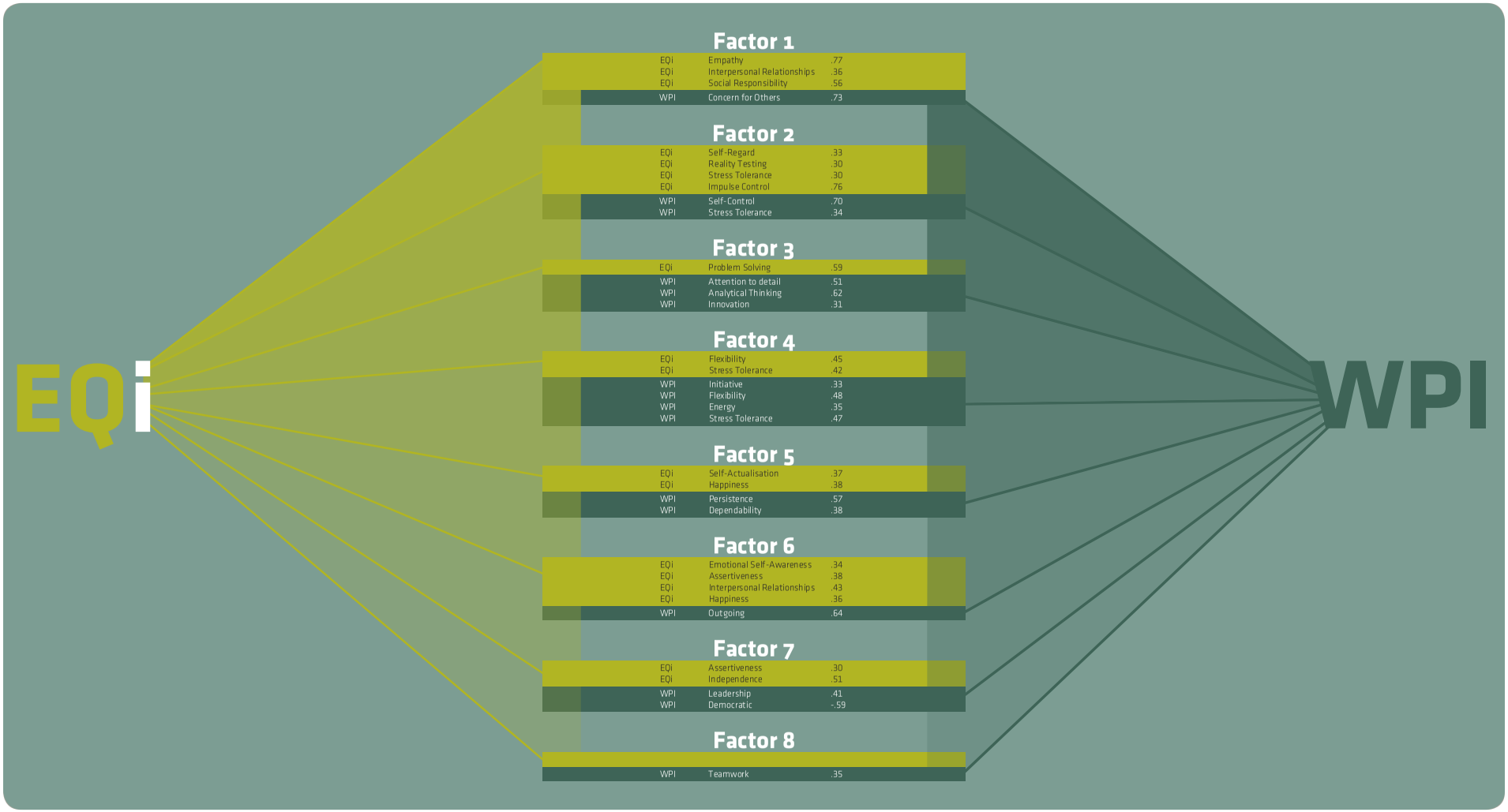


Figure 1. Interbattery factor analysis uses either quadrant two or quadrant three in the analysis

RESULTS

Several factor solutions were tested. The direct quartimin-rotated eight-factor solution provided the most parsimonious and theoretically meaningful solution. The Tucker-Lewis reliability coefficient (TLI = 0.96) and the Akaike Information Criterion (AIC = 1.62) suggested that the eight factor solution was the most practical solution with acceptable fit statistics. Loadings of .30 and higher on each of the factors are presented in the graph to the right.


EQi
WPI
Factor 1
EQi Empathy .77
EQi Interpersonal Relationships .36
EQi Social Responsibility .56
WPI Concern for Others .73
Factor 2
EQi Self-Regard .33
EQi Reality Testing .30
EQi Stress Tolerance .30
EQi Impulse Control .76
WPI Self-Control .70
WPI Stress Tolerance .34
Factor 3
EQi Problem Solving .59
WPI Attention to detail .51
WPI Analytical Thinking .62
WPI Innovation .31
Factor 4
EQi Flexibility .45
EQi Stress Tolerance .42
WPI Initiative .33
WPI Flexibility .48
WPI Energy .35
WPI Stress Tolerance .47
Factor 5
EQi Self-Actualisation .37
EQi Happiness .38
WPI Persistence .57
WPI Dependability .38
Factor 6
EQi Emotional Self-Awareness .34
EQi Assertiveness .38
EQi Interpersonal Relationships .43
EQi Happiness .36
WPI Outgoing .64
Factor 7
EQi Assertiveness .30
EQi Independence .51
WPI Leadership .41
WPI Democratic -.59
Factor 8
WPI Teamwork .35

DISCUSSION

There appears to be some conceptual overlap between the scales of the EQi and Work Personality Index. For example, Flexibility, Stress Tolerance, Self Control and Impulse Control are measured directly on both instruments. For the remainder of the scales, the shared loadings of EQi and Work Personality Index assessment constructs are insightful and provide for an enriched understanding of the constructs on both instruments.

The results from this study did not yield similar results to those reported by Petrides and Furnham (2001) or Petrides, Pita and Kokkinaki (2007), in which mixed model EI loaded separately in personality factor space. This was expected since the use of interbattery factor analysis, rather than joint factor analysis, accounts for the possibility of method artefacts.

As the EQi's original conceptualisation was based on personality, and the mainstream personality taxonomies were not yet established during Bar-On's (1988) initial research, one would expect to locate many EQi constructs in the factor space of established trait taxonomies. The results from this study have shown that the EQi can be located in personality factor space, and as such facilitates our understanding of the theoretical and empirical relationship between the EQi and personality measures.

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