Furnham, A., & Treglown, L. (2018). High potential personality and intelligence. *Personality and Individual Differences, 128*(July), 81-87.
Doi: https://doi.org/10.1016/j.paid.2018.02.025

High Flyer Personality and Intelligence

Adrian Furnham [1] and Luke Treglown[2]

[1] *BI: Norwegian Business School, Nydalsveien 37, 0484 Oslo, Norwa*

[2]*Department of Psychology, University College London, 26 Bedford Way, London WC1E 6BT, UK.*

ABSTRACT

The present study investigated the relationship between six high flyer personality traits and intelligence measured at the domain and facet level. In all, 820 adults completed a multidimensional High Flyers Personality Inventory (measuring six traits) and a multidimensional intelligence test. Correlational analysis showed four traits were related to specific measures of IQ; particularly Conscientiousness, Risk Approach, Ambiguity Acceptance, and Competitiveness. Regressions showed the five IQ measures were differently related to the six high flyer traits, accounting for between three and seven percent of the variance. Additionally, structural equation models (SEM) demonstrated that these relationships differ between male and female participants. Results are discussed in terms of the literature on the relationship between preference (personality) and power (ability) tests. Limitations are acknowledged.

Key Words: Intelligence, Conscientiousness, Risk Approach, Curiosity, Ambiguity, Competiveness, Neuroticism.

Introduction

There have been many recent studies on the relationship between personality and intelligence (Goff & Ackerman, 1992; Ackerman & Heggestad, 1997; Furnham, Forde & Cotter, 1998; Austin, Deary, Whiteman, Fowkes, Pedersen, Rabbitt, Bent & McInnes, 2002; Moutafi, Furnham & Crump, 2003). Most have focused on measures of intelligence in relation to the personality factors of the Five Factor Model (FFM). This study focuses on High Flyer Traits.

Cognitive ability refers to what a person can achieve in educational settings, personality variables determine whether and *how* and *why* they do or do not realize potential. Cattell (1971) suggested that certain elements of personality will have an intellectual ability component, which will affect general ability. Indeed Cattell has an investment model which suggests that personality traits (like Conscientiousness and Openness) may have long-term effects on the development of intellectual abilities. Thus, personality factors may be seen as motivational variables that have a strong impact on academic results.

The major replicated findings on the relationship between intelligence and the Big 5 factors of personality are that intelligence is positively correlated with Openness to Experience (Ackerman & Heggestad, 1997; Chamorro-Premuzic, Moutafi & Furnham, 2003; Moutafi, Furnham & Paltiel, 2004), negatively correlated with Neuroticism (Ackerman & Heggestad,

1997) and Conscientiousness (Demetriou, Kyriakides, & Avramidou, 2003; Moutafi et al. 2004a) and correlated with Extraversion, the sign of the correlation depending on the testing conditions (Ackerman & Heggestad 1997; Austin et al., 2002; Furnham et al., 1998; Lynn, Hampson & Magee, 1982; Moutafi et al., 2003; Moutafi et al., 2004a).

O'Connor and Paunonen (2007) concluded that Conscientiousness was the trait most strongly and consistently associated with academic performance (AP) while Openness was sometimes but not always positively associated with scholastic achievement. Overall, the results suggest that Extraversion is negatively correlated with AP at university, but positively correlated with AP in primary school. Neuroticism is usually slightly negatively correlated with AP because anxiety negatively impacts on test performance, while Agreeableness seems unrelated to AP.The results suggest that where the relationship between personality traits and intelligence was significant, correlations were very modest.

High Flyer Traits

Based on Silzer and Church's (2009ab) theoretical framework of potential, MacRae and Furnham (2014) have developed the High Potential Traits Inventory (formerly High Flying Personality Inventory), a measure of personality traits directly relevant to workplace behaviours, thoughts and perceptions of the self and others at work. The HPTI can be used to investigate which personality traits in the workplace might predict career success and thus predict high potential The High Potential Traits Inventory (MacRae, 2012; MacRae & Furnham 2014) was designed to provide an accurate, valid and clear measure of personality at work. Originally composed of ten factors and characteristics related to success and leadership capability, the traits were recombined into six common factors (MacRae, 2012), which are most

relevant for the workplace using Factor Analysis and Structural Equation Modelling. The HPTI factors used to assess potential at work are Conscientiousness, Adjustment, Curiosity, Ambiguity Acceptance, Risk Approach, and Competitiveness

Teodoresc, Furnham & MacRae (2017) used the HPTI to investigate associations between personality traits and measures of career success, in a sample of 383 employed individuals. The HPTI traits related to subjective and objective measures of success with Conscientiousness being the strongest predictor. These results are consistent with previous research on High Flyers.

Based on the Big Five and the High Flyer studies there is good reason to believe that there would be a significant positive relationship between all traits, particularly Conscientiousness and Curiosity and IQ.

Intelligence

There are many passionate debates around the definition and measurement of IQ. There are also a number of tests available. Most people who work in the area accept the concept of general intelligence ('g') and accept that all well designed intelligence tests correlate highly with each other (Deary, 2000; 2001). They also accept that it is possible to measure different facets of intelligence (Level 1) abilities which while they correlate with each other are differentially related to other variables (Carroll, 1997). This study involves a validated IQ test, not before used in this research: *General Intelligence Assessment (GIA).* It has five components:

The *Reasoning Test* assesses the ability to make inferences, to reason from information provided and to draw correct conclusions. This test assesses the ability of an individual to hold information in his short-term memory and solve problems after receiving either verbal or written instructions. A high score would suggest fluent verbal reasoning skills.

The *Perceptual Speed Test* assesses the capacity to recognise details in the environment, incorporating the perception of inaccuracies in written material, numbers and diagrams, the ability to ignore irrelevant information, to identify similarities and differences in visual configurations. This test assesses how quickly and accurately an individual can check and report for error/accuracy. It is a test of semantic encoding and perception. A high score would suggest the ability to: mentally match the features of letters and the meaning of symbols. It would also indicate the ability to detect misfits.

The *Numeracy Speed and Accuracy Test* is a test of numerical manipulation and a measure of basic numerical reasoning ability. It measures the degree to which an individual can work comfortably with quantitative concepts. It assesses the ability to work in environments where basic numeracy is required and wherever attention and concentration are required regarding numerical applications. Numeracy is required and wherever attention and concentration are required regarding numerical applications.

The *Word Meaning Test* assesses word knowledge and vocabulary. It assesses the comprehension of a large number of words from different parts of speech and the ability to identify the words that have similar or opposite meanings. It assesses the ability to work in environments where a clear understanding of written or spoken instructions is required.

The *Spatial Visualisation Test* assesses the ability to create and manipulate mental images of objects. This test correlates well with tests of mechanical reasoning and assesses an individual's ability to use mental visualisation skills to compare shapes. It relates to the ability to work in environments where visualisation skills are prerequisites for understanding and executing

tasks. It assesses the suitability of an individual for tasks such as design work, where the individual must visualise how shapes and patterns fit together to form a whole.

Method

Participants

There were 820 participants in total, composed of 377 females and 443 males. The participant sample were all from the United Kingdom, where participants were assessed by a UK psychometrics consultancy as a part of recruitment or selection and development.

Measures

1. *HPTI Measure.* The HPTI is designed to measure personality traits in a workplace-context. There are 6 factors including conscientiousness, adjustment, curiosity, ambiguity acceptance, risk approach and competitiveness. These six factors are measured with a 78-item questionnaire. Scores for each factor are z-scores that are based upon the means and standard deviations of an original norm sample.
2. *General Intelligence Assessment (GIA).* The GIA was used to assess speed, accuracy and cognitive processes. There are five tests within the GIA including Reasoning (VR; how quickly one can learn and retain information – at test of time – how quickly one can process information), Error Checking (PS; can pick out typos – measures perceptual speed), Numerical Ability (ND; a test of number manipulation and reasoning), Word Meaning (WM; quickly understanding word meaning) and Spatial Visualisation (SP; visual rotation exercise). Scores for each test are adjusted scores: a function of number

of items attempted and items correctly answered, with an adjustment to account for guessing.

Procedure

Participants were sent instructional text for each test via email. The test could then be taken at a time that best suits the participant. The psychometrics company's online tech-portal was used to administer the tests where login details provided by the company to each participant. The first dataset was used in this study to eliminate practice effects despite participants taking more than one test over a period of time.

Results

Analysis

The dataset was organised and cleaned using SPSS 24.0. Structural equation modelling (SEM) was conducted in the Lavaan package (Rosseel, 2012; version 0.5-20) of R (version 3.3.0). Based upon Kline's (2005) recommendations, the following fit indices were applied: the χ^2/df ratio, RMSEA, Standardised Root Mean Residual (SRMR), and the Comparative fit index (CFI). An excellent fit is indicated when $\chi^2/df < 3.00$ (van Dam, 2015), RMSEA < .05 (MacCallum, Browne, & Sugawara, 1996), SRMR > .08 (Hu & Bentler, 1998), and CFI > .95 (Hooper, Coughlan, & Mulen, 2008).

Correlations and Regressions

Insert Table 1

Table 1 shows correlations between gender, personality and intelligence. The results for gender indicate females had significantly lower scores on three high flyer traits (Conscientiousness,

Risk Approach, and Competitiveness) while they scored lower on two IQ tests (Number Speed and Spatial Visualisation). Table 1 also shows the 30 correlations between personality traits and intelligence. Five significant correlations emerged: verbal reasoning (VR) correlated negatively with conscientiousness and positively with curiosity; competitiveness significantly positively correlated with PS, ND, and WM.

A series of hierarchical regressions were conducted to assess the degree to which overall IQ and the individual IQ tests explain variance in HPTI factor scores. Gender was entered in the first step for each regression.

Insert Table 2

Table 1 shows the results of six regressions that examined the individual effects of each IQ test. Despite gender being a significant predictor of four traits in the first step, in the second step gender was only a significant predictor of Conscientiousness ($ß$ = -0.10; p = .005), Risk Approach ($ß$ = -.25; p < .001), and Competitiveness ($ß$ = -.20; p < .001). This confirmed the correlational results that indicated female employees having lower scores on these factors. In the second step, the IQ measures were predictive of three HPTI traits: VR negatively predicted Conscientiousness; NS (positive) and WM (positive) were significant predictors of Ambiguity Acceptance; and NS (positive) and WM (negative) were significant predictors of Competitiveness. The significant regressions explained between 3.7% (Ambiguity Acceptance) and 6.9% (Competitiveness) of the variance in HPTI traits.

Structural Equation Models

SEM was used to further explore the relationships between IQ and HPTI. In particular, SEM was used to assess differences in these relationships between males and females. Three models were created: the first examined the role of specific intelligence tests in predicting HPTI traits;

the following two each assessed these relationships with only male or female participants. In each, the five IQ tests and six HPTI traits were entered as observed variables. As gender was being used as a comparative variable, it was excluded from the analysis. Non-significant regressions were removed in a step-wise fashion, where the model was re-tested until only significant terms remained.

The first model examined the relationships between IQ and HPTI traits (n = 820), the results of which are displayed in Figure 1. The chi-square statistic was not significant ($\chi2(18) = 12.1$, $p = .843$). Other fitness indices also suggested an excellent fit of the data: $\chi2/df = 0.67$; CFI = 1.00; RMSEA = .00; SRMR = .013.

Spatial Visualisation was a significant predictor of Conscientiousness (positive), Adjustment (positive), and Risk Approach (positive). Number Speed predicted Adjustment (negative), Ambiguity Acceptance (positive), and Competitiveness (positive). Word Meaning was noted to predict Curiosity (positive), Ambiguity Acceptance (positive) and Risk Approach (negative), whilst Perceptual Speed was a negative predictor of Ambiguity Acceptance. Contrary its non-significance in the regressions, Verbal Reasoning was found to significantly predict Conscientiousness (negative) and Risk Approach (negative).

Insert Figure 1

The second model examined the relationships between IQ and HPTI for female participants (n = 443), the results of which are shown in Figure 2. The chi-square statistic was not significant ($\chi2(13) = 8.21$, $p = .829$). Other indices of model fit also suggested an excellent fit of the data: $\chi2/df = 0.63$; CFI = 1.00; RMSEA = 0.00; SRMR = .017.

For female participants: Conscientiousness was predicted by Verbal Reasoning (negative) and Perceptual Speed (positive); Adjustment was predicted by Verbal Reasoning (negative) and Word Meaning (positive); Curiosity was only predicted by Perceptual Speed (positive); Risk

Approach was predicted by Verbal Reasoning (negative) and Perceptual Speed (positive); Ambiguity Acceptance was positively predicted by both Word Meaning and Number Speed; and finally Competitiveness was predicted by Word Meaning (negative) and Number Speed (positive). Spatial Visualisation was removed entirely from the model due to its non-significance in predicting any of the HPTI traits.

Insert Figure 2

The second model examined the same relationships for male participants (n = 377). The results of this can be seen in figure 2. As seen in model 1 and 2, the chi-squared statistic for model 3 was not significant ($\chi2(14) = 5.98$, $p = .967$). Additional indicators of model fit suggested an excellent fit of the data: $\chi2/df = 0.41$; CFI = 1.00; RMSEA = .00; SRMR = .018.

For male participants: Adjustment was predicted by Perceptual Speed (positive) and Word Meaning (negative); Curiosity was predicted by Word Meaning (positive); Number Speed was predicted Risk Approach (negative) and Ambiguity Acceptance (positive); and Competitiveness was predicted by Verbal Reasoning (positive). Spatial Visualisation was removed from the model due to its non-significance in predicting any of the HPTI traits. Additionally, Conscientiousness was removed entirely as a dependent variable due to none of the IQ factors being significant predictors.

Insert Figure 3

Discussion

The current study has examined the role of intelligence in predicting high flyers personality. In particular, it has attempted to extend the literature by differentiating the structure of intelligence on high potential by gender.

Despite a wealth of evidence suggesting the link between the Big 5 trait Conscientiousness and job performance and academic success (O'Connor and Paunonen, 2007), previous research has also indicated that Conscientiousness and intelligence are negatively related (Furnham et al., 2005; Moutafi et al., 2004). According to the intelligence compensation theory (Wood & Englert, 2009), intelligence influences the development of conscientiousness as less intelligent individuals use hard work and precision to 'keep up' with their more intelligent counterparts (Moutafi et al., 2003).

The current study found mixed results for the relationship between intelligence and Conscientiousness. Initial regression analysis provided support for previous research, finding that VR was predictive of lower Conscientiousness. Previous research has argued that VR represents a form of fluid intelligence due its independence of previous knowledge (Moutafi et al., 2004). As such, the current study finds further support for the intelligence compensation theory as VR and Conscientiousness are negatively related (Moutafi et al., 2004). However, SEM analysis revealed that SP – a visual rotation exercise – had a positive effect on Conscientiousness. This study represents one of the first to show this relationship, with previous research finding no association between spatial-rotation tasks and Conscientiousness (von Stumm et al., 2009; Escorial et al., 2006).

Differences also emerged when the results were compared across male and female participants. Whilst female participants' Conscientiousness was similarly related to lower levels of VR ability, PS (and not SP) instead positively predicted conscientiousness. Additionally, this study found that Conscientiousness was not predicted by any of the specific intelligence tests for males. The positive relationship between PS and Conscientiousness supports previous research which has suggest that perfectionist strivings is related to higher scores on cognitive ability tests (Stoeber et al., 2007). However, Stoeber et al.'s (2007) study did not differentiate results by gender, so it is unclear whether the independence of intelligence from conscientiousness in

males highlights methodological limitations in personality-intelligence research or is simply an artefact of this study. Future research should examine this relationship further to evaluate this question.

Intelligence has been shown to consistently correlate with lower levels of Neuroticism (e.g. Furnham & Cheng, 2017; Moutafi et al., 2004). It is argued that because low neurotics (high adjustment) are secure and relaxed even under stressful conditions, they are able to perform to higher levels in anxiety-provoking situations (i.e. intelligence tests; Moutafi et al., 2006). However, previous research has also found that higher Neuroticism (lower Adjustment) is associated with higher scores on spatial-rotation tasks (Escorial et al., 2006). This study found mixed results for the relationship between high intelligence and low Adjustment. SEM indicated that, whilst Adjustment was associated with higher levels of SP, it was also associated with lower levels of ND. This latter result is in contrast with findings in the literature that indicate Adjustment is related to higher adeptness with mental arithmetic (e.g. Reynolds et al., 2014). Gender differences were also noted: adjustment for female participants being associated with lower VR and higher WM, whereas PS positively and WM negatively predicted Adjustment in males. Interestingly, WM had the opposite effect on adjustment for male and females. This contrasting effect could explain why no significant association was seen for the total sample.

Curiosity - marked by high openness, creativity, imagination, and cognitive complexity – was hypothesised to associate with higher levels of intelligence. Previous research has shown strong relationships between intelligence and similar personality variables: a study by Furnham and Bachtiar (2008) found openness to experience was positively related to general intelligence. SEM analysis indicated that individuals high on curiosity exhibited higher levels of WM ability. However, this result was only significant for male participants. For female participants, curiosity was instead associated with higher levels of PS.

Little research has been conducted assessing the link between intelligence and the willingness to proactively confront difficult situations and decisions at work (Risk Approach). Of the few studies that have been conducted on similar constructs, there have been mixed results: one study indicates that fluid intelligence is negatively related to indecisiveness (low risk approach) at work (Di Fabio & Palazzeschi, 2013), whilst other research suggests intelligence provides no explanatory power in an individual's ability to efficacy or willingness to make decisions (Di Fabio & Saklofske, 2014). However, this is the first study to look at specific rather than general measures of fluid intelligence. As such, this has extended the literature in finding that individuals with higher SP and low levels of VR exhibited a higher risk-tolerance at work. Additionally, differences were noted between male and female participants. Risk-tolerance in males was associated with lower levels of ND, yet risk-tolerant females exhibited higher levels of PS and lower levels of VR.

The relationship between Ambiguity Acceptance and intelligence has been scantly researched. This study found that multiple intelligence measures (ND, WM, and PS) were predictive of higher tolerance of uncertainty. Previous researchers have found that more intelligent individuals are able to adequately adapt to and evaluate changing work tasks, leading to greater accuracy in decision-making (LePine et al., 2000). As such, this greater adaptability in uncertain tasks supports the notion that intelligence allows individuals to successfully navigate working conditions and decisions that lack definitiveness. Individuals who are lower on intelligence may compensate by having a lower tolerance for uncertainty, utilising structure to increase efficiency in their work. Additionally, gender differences were noted in the relationship between intelligence and Ambiguity Tolerance: female participants had higher levels of uncertainty tolerance when they exhibited high levels of WM and ND, yet only males with higher ND exhibited higher levels.

Finally, this study assessed how intelligence explains variance in individual Competitiveness. Previous research has indicated that higher general intelligence is predictive of Type A personality, characterised in part by high competitiveness (Austin, 2002). This is the first study to: a) examine the role of intelligence on competitiveness specifically (as opposed to being a part of a larger construct), and b) examine the influence of specific (as opposed to general) forms of intelligence. The results indicated that intelligence plays a mixed role, with higher numerical ability yet lower WM being predictive of greater Competitiveness. Additionally, this result was different for male participants, as VR was the sole predictor of Competitiveness.

However, this study is not without limitations. In line with what has been seen in previous research, the correlates, effect sizes, and variance explained between cognitive ability and personality are low. For instance, Von Stumm et al. (2009) found one coefficient that exceeded .20. This is similar to what is seen in the current study, with the latest beta weight being 0.18 and R^2 values not exceeding .069. Whilst this study employed a mixture of self-report and ability tests, it is still limited by its cross-sectional design. As such, the extent to which generalisations can be made from the results must be caveated.

References

Ackerman, P. L., & Heggestad, E. D. (1997). Intelligence, personality, and interests: Evidence for overlapping traits. *Psychological Bulletin, 121,* 219–245.

Austin, A. J., Deary, I. J., Whiteman, M. C., Fowkes, F. G. R., Padersen, N. L., Rabbitt, P., et al. (2002). Relationships between ability and personality: Does intelligence contribute positively to personal and social adjustment? *Personality and Individual Differences, 32,* 1391–1411.

Carroll, J. B. (1997). The three-stratum theory of cognitive abilities.

Cattell, R. B. (1971). *Abilities: Their structure, growth, and action.* Boston: Houghton Mifflin.

Chamorro-Premuzic, T., Furnham, A., & Moutafi, J. (2004). The relationship between estimated and psychometric personality and intelligence scores. *Journal of Research in Personality, 38,* 505 – 513.

Deary, I. (2000). Looking down on human intelligence. Oxford: Oxford University Press.

Deary, I. (2001). *Intelligence: A very short introduction*. Oxford: Oxford University Press.

Demetriou, A., Kyriakides, L. & Avraamidou, C. (2003). The missing link in the relations between intelligence and personality. *Journal of Research in Personality, 37,* 547-581.

Di Fabio, A., & Palazzeschi, L. (2013). Incremental variance in indecisiveness due to cognitive failure compared to fluid intelligence and personality traits. *Personality and Individual Differences, 54*(2), 261-265.

Di Fabio, A., & Saklofske, D. H. (2014). Comparing ability and self-report trait emotional intelligence, fluid intelligence, and personality traits in career decision. *Personality and Individual Differences*, *64*, 174-178.

Escorial, S., García, L. F., Cuevas, L., & Juan-Espinosa, M. (2006). Personality level on the big five and the structure of intelligence. *Personality and individual differences*, *40*(5), 909-917.

Furnham, A., & Bachtiar, V. (2008). Personality and intelligence as predictors of creativity. *Personality and individual differences*, *45*(7), 613-617.

Furnham, A., & Cheng, H. (2017). Factors affecting adult trait Neuroticism in a nationally representative sample. *Psychiatry Research*, 253 – 257.

Furnham, A., Forde, L., & Cotter, T. (1998). Personality scores and test taking style. *Personality and Individual Differences*, *24*(1), 19-23.

Goff, M., & Ackerman, P. (1992). Personality-intelligence relations: Assessment of typical intellectual engagement. *Journal of Educational Psychology*, *84*, 537–552.

Hooper, D., Coughlan, J., & Mullen, M. (2008). Structural equation modelling: Guidelines for determining model fit. *The Electronic Journal of Business Research Methods*, *6*, 53 – 60.

Hu, L. T., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological methods*, *3*(4), 424 – 453.

Kline, R. B. (2005). *Principals and Practices of Structural Equations Modelling.* New York: Guildford Press.

LePine, J. A., Colquitt, J. A., & Erez, A. (2000). Adaptability to changing task contexts: Effects of general cognitive ability, conscientiousness, and openness to experience. Personnel psychology, 53(3), 563-593.

MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological methods*, *1*(2), 130.

MacRae, I. (2012). Success, potential and validating a measure of High Flying Personality Traits in Organisations. Unpublished Thesis. University College London.

MacRae, I., & Furnham, A. (2014). *High Potential: How to spot, manage and develop talented people at work.* London: Bloomsbury.

Moutafi, J., Furnham, A., & Crump, J. (2003). Demographic and personality predictors of intelligence: A study using the NEO Personality Inventory and the Myers–Briggs Type Indicator. *European Journal of Personality*, *17*, 79–94.

Moutafi, J., Furnham, A., & Crump, J. (2006). What facets of openness and conscientiousness predict fluid intelligence score? *Learning and Individual Differences, 16,* 31-42.

Moutafi, J., Furnham, A., & Paltiel, L. (2004). Why is Conscientiousness negatively correlated with intelligence? *Personality and Individual Differences, 37,* 1013-1022.

O'Connor, M. & Paunonen, S. (2007). Big five personality predictors of post-secondary academic performance. *Personality and Individual Differences, 43,* 971-990.

Poropat, A. (2009). A meta-analysis of the five-factor model of personality and academic performance. *Psychological Bulletin, 135,* 322-336.

Reynolds, J., McClelland, A., & Furnham, A. (2014). An investigation of cognitive test performance across conditions of silence, background noise and music as a function of neuroticism. *Anxiety, Stress, & Coping*, *27*(4), 410-421.

Rosseel, Y. (2012). lavaan: An R package for structural equation modeling. *Journal of Statistical Software*, *48*(2), 1-36.

Silzer, R., & Church, A. H. (2009a). Identifying and assessing high potential talent: Current organizational practices. In R. F. Silzer, & B. E. Dowell (Eds.) *Strategy-driven talent management: A leadership imperative.*

Silzer, R., & Church, A. H. (2009b). The pearls and perils of identifying potential. *Industrial and Organizational Psychology, 2*(4), 377-412.

Stoeber, J., & Kersting, M. (2007). Perfectionism and aptitude test performance: Testees who strive for perfection achieve better test results. *Personality and Individual Differences*, *42*(6), 1093-1103.

Teodorescu, A., Furnham, A., & Macrae, I. (2017). Trait correlates of success at work. *International Journal of Selection and Assessment, 25,* 36-42

Wood, P., & Englert, P. (2009). Intelligence compensation theory: A critical examination of the negative relationship between conscientiousness and fluid and crystallised intelligence. *The Australasian Journal of Organisational Psychology, 2,* 19-29.

van Dam, K. (2015). Workplace goal orientation. *European Journal of Psychological Assessment, 31*, 62 – 68.

Von Stumm, S., Chamorro-Premuzic, T., Quiroga, M. A., & Colom, R. (2009). Separating narrow and general variances in intelligence-personality associations. *Personality and Individual Differences*, *47*(4), 336-341.

Table 1

Summary of Means, Standard Deviation and Correlations for scores on HPTI and GIA

Measure	Mean	Standard Deviation	1	2	3	4	5	6	7	8	9	10	11
1. Gender													
2. Conscientiousness	.590	.959	-.11*										
3. Adjustment	.555	.904	-.04	.39**									
4. Curiosity	.372	.845	-.01	.33**	.18**								
5. Risk Approach	.488	1.06	-.25***	.56**	.46**	.45**							
6. Ambiguity Acceptance	-.128	.986	-.09	.14**	.40**	.32**	.40**						
7. Competitiveness	.029	1.04	-.21**	.31**	-.08*	.16**	.31**	.01					
8. Verbal Reasoning	40.4	8.09	.04	-.10*	-.05	.07*	-.05	.10*	.06				
9. Perceptual Speed	43.2	6.27	.01	.05	.02	.07	.00	.04	.08*	.47**			
10. Number Speed	14.6	5.80	-.20**	.02	-.04	.04	.01	.14**	.17**	.40**	.37**		
11. Word Meaning	30.7	4.79	-.03	-.06	-.02	.06	-.02	.15**	-.01	.50**	.40**	.36**	
12. Spatial Visualisation	9.64	5.14	-.15**	.04	.05	.01	.05	.07	.07	.26**	.26**	.38**	.23**

Note = * p <.05, ** p <.01, *** p <.001

Table 2.

Results for regressions of IQ variables, with the HPTI as criterion scores

		Conscientiousness		**Adjustment**		**Curiosity**		**Risk Approach**		**Ambiguity Acceptance**		**Competitiveness**	
		β	*t*	β	*t*	β	*t*	β	*t*	β	*t*	β	*t*
Step 1	Gender	-.11	-3.30**	-0.04	-1.23	-0.01	-0.36	-0.25	-7.30***	-0.09	-2.51*	-0.21	-6.18***
	F Change	*F*(1, 818) = 10.8**		*F*(1, 818) = 1.52		*F*(1, 818) = 0.13		*F*(1, 818) = 53.3***		*F*(1, 818) = 6.30*		*F*(1, 818) = 38.1***	
	R^2	0.01		0.002		0.00		0.06		0.01		0.05	
Step 2	Verbal Reasoning	-0.12	-2.84**	-0.06	-1.40	0.04	0.91	-0.03	-0.79	0.03	0.75	0.05	1.14
	Perceptual Speed	0.07	1.69	0.06	1.39	0.04	0.91	0.04	0.95	-0.05	-1.30	0.05	1.16
	Number Speed	0.02	0.59	-0.08	-1.78	0.01	0.11	-0.05	-1.12	0.09	2.27*	0.13	3.24**
	Word Meaning	-0.05	-1.14	-0.00	-0.031	0.03	0.72	-0.02	-0.48	0.12	2.81**	-0.10	-2.40*
	Spatial Visualisation	0.05	1.18	0.07	1.87	-0.02	-0.47	0.03	0.83	-0.00	-0.05	-0.02	-0.39
	F Change	*F*(5, 813) = 2.77*		*F*(5, 813) = 1.78		*F*(5, 813) = 1.17		*F*(5, 813) = 0.728		*F*(5, 813) =4.96***		*F*(5, 813) = 4.21***	
	R^2 (ΔR^2)	0.030 (*0.017*)		0.013 (*0.011*)		0.007 (*0.007*)		0.065 (*0.004*)		0.037 (*0.029*)		0.069 (*0.024*)	

Note = * p <.05; ** p < .01; ** p <.001; Standardized Beta values were used.

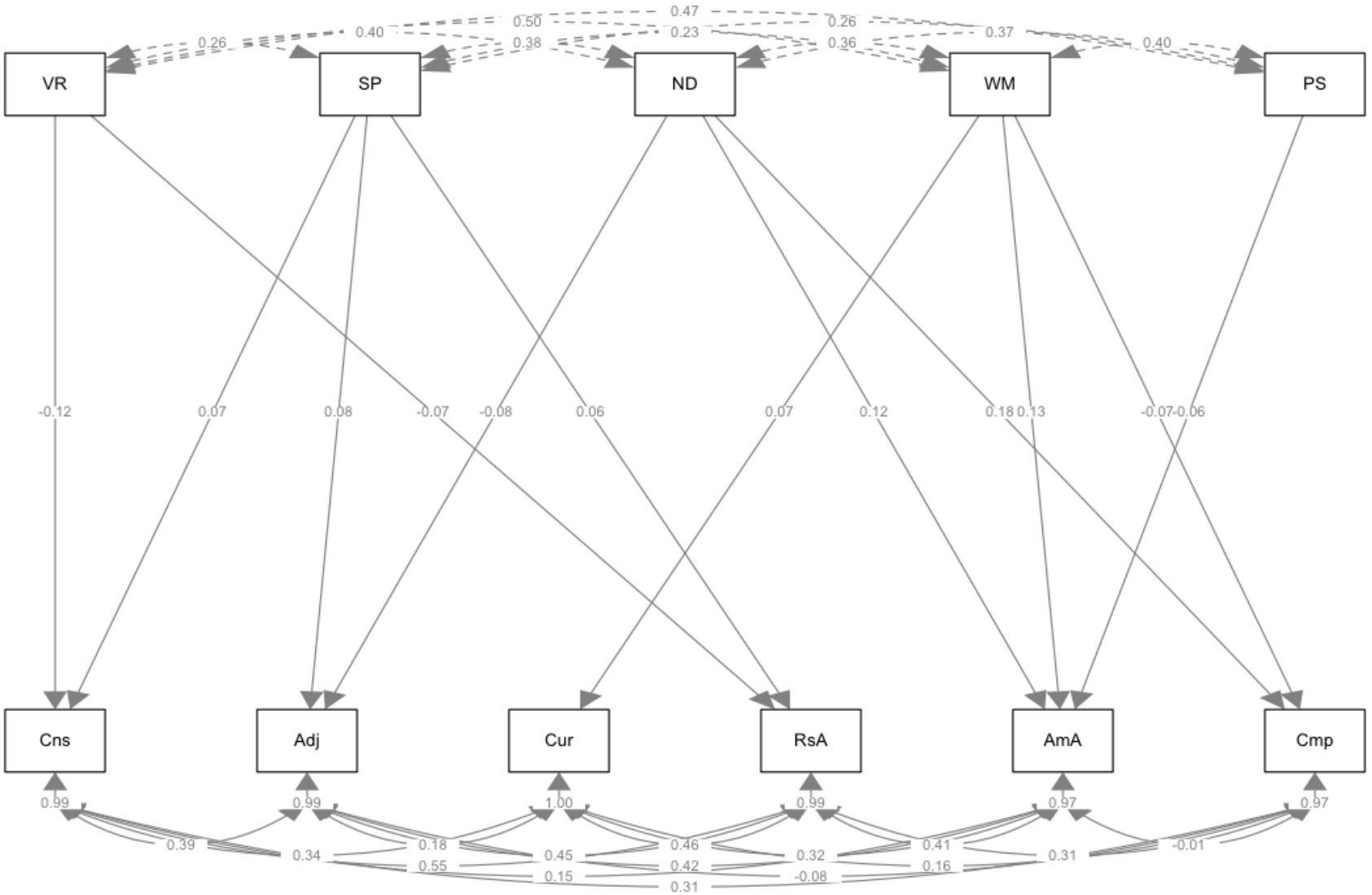

Figure 1. Structural Equation Model of IQ and HPTI variables.

Note: VR = Verbal Reasoning; SP = Spatial Visualisation; PS = Perceputal Speed; ND = Number Speed; WM = Word Meaning; CnS = Conscientiousness; Adj = Adjustment; Cur = Curiosity; RsA = Risk Approach; AmA = Ambiguity Acceptance; Cmp = Competitiveness. Standardized estimates used.

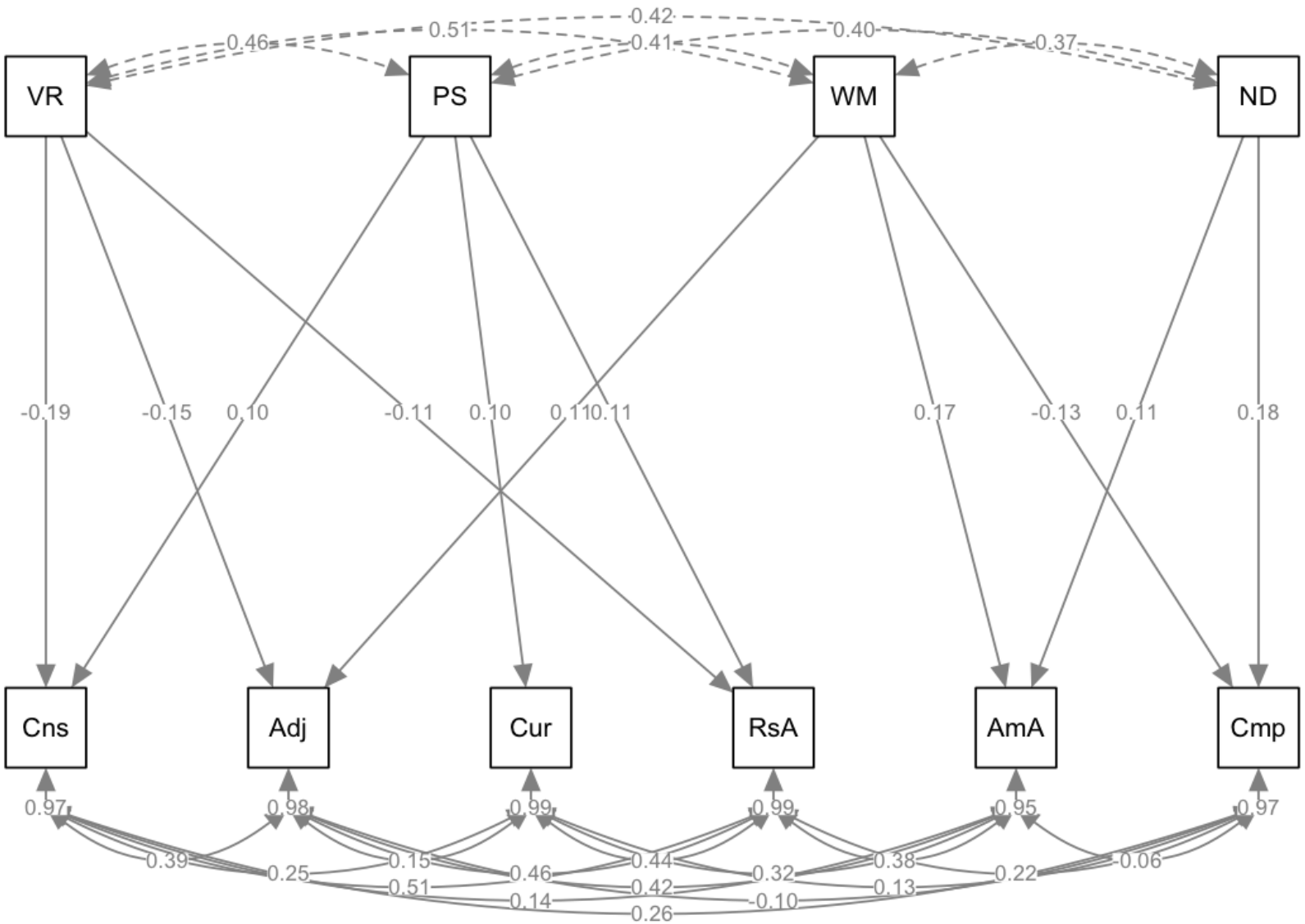

Figure 2. Structural Equation Model of IQ and HPTI variables for Female Participants.

Note: VR = Verbal Reasoning; PS = Perceputal Speed; ND = Number Speed; WM = Word Meaning; CnS = Conscientiousness; Adj = Adjustment; Cur = Curiosity; RsA = Risk Approach; AmA = Ambiguity Acceptance; Cmp = Competitiveness. Standardized estimates used.

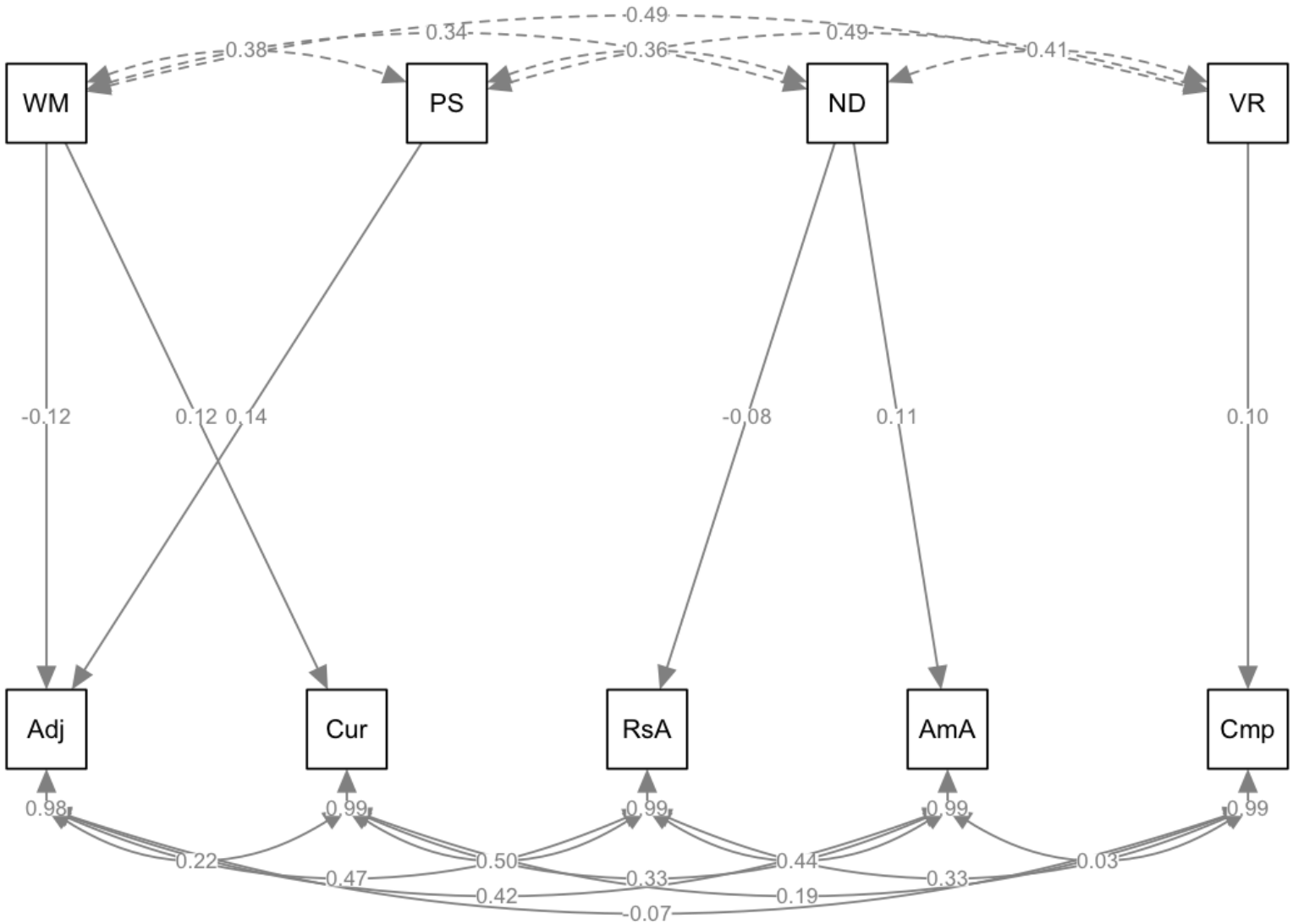

Figure 3. Structural Equation Model of IQ and HPTI variables for Male participants.

Note: SP = Spatial Visualisation; PS = Perceputal Speed; ND = Number Speed; WM = Word Meaning; Adj = Adjustment; Cur = Curiosity; RsA = Risk Approach; AmA = Ambiguity Acceptance; Cmp = Competitiveness. Standardized estimates used.