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Furnham, A. (2021). Demographic, Personality Trait and Personality Disorder Correlates of Aesthetic Motivation. *Imagination, Cognition and Personality*, 40(4), 333–350. <https://doi.org/10.1177/0276236620942917>

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## Demographic, Personality Trait and Personality Disorder correlates of Aesthetic Motivation

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**Abstract** This study looked at personality trait and personality disorder correlates of self-rated motives for aesthetic motivation. In two studies over 4000 adult British managers completed a battery of tests including a ‘bright side’ personality trait measure (HPI); a ‘dark side’/disorders measure (HDS), and a measure of their Motives and Values for Aestheticism and Culture. The two studies showed similar results revealing that for bright-side traits Interpersonal Sensitivity (Agreeableness) and Inquisitiveness ( Openness-to-Experience) were positively and Adjustment (low Neuroticism). For dark-side traits Imaginativeness (Schizotypy) and Dutifulness (Dependency) were positively while Reserved (Schizoid) and Excitable (Borderline) were negatively correlated with aesthetic drives. Implications for the selection and management of aesthetic people in a business are considered. Limitations and future directions of this research are also noted.

Key Words: Aesthetic, artistic, personality demographic

## **Introduction**

The psychological profile of an aesthete, or a person interested in culture, may be defined as a one who has refined sensitivity toward the beauties of the world and who expresses a great love of art, music, and poetry, and often an indifference to practical matters. Aesthetic interests and motivation is a research area that continues to attract attention (Corradi, Chuquichambi, Barrada, Clemente, & Nadal, 2019).

This study looks at personality trait and personality disorder correlates of those interested in, and motivated by general Aesthetic Motivation (AM), which part leads people to choose occupations and hobbies in that area. This topic was selected for research as there appears to be a paucity of research studies in the area, though there are a number of related topics.(discussed below). The central aim was to look at demographic, personality trait and personality disorder correlates of AM to address the central question of the personality profile of those interested in AM. An understanding of these correlates is of particular use to those in vocational psychology when trying to understand who seem most happy in, and “fitted to” aesthetic jobs and careers.

## **Interest in Aestheticism**

Over the years, those interested in needs and preferences have identified what might be called an aesthetic attitude or motive. Murray's (1938) *Need for Sentience*, which he described as seeking out sensuous feelings and impressions, is similar to Spranger (1922)'s *Aesthetic Attitude*. Holland's (1987) *Artistic Type* values the world of beauty, identifies with artists of various disciplines, and aspires to work in artistic pursuits. Holland describes artistic types as creative, sensitive, imaginative, and nonconforming.

We used the Aestheticism scale from the *Motives, Values, Preferences Inventory* (MVPI) as the criterion variable in this study (Hogan, Hogan & Warrenfeltz, 2007). The MVPI Manual suggests that aesthetic motives are associated with an interest in art, literature, music, and a lifestyle guided by issues of imagination, culture, and good taste. People with high scores on this scale care about aesthetic values and creative self-expression, and they tend to choose careers in art, music, advertising, journalism, or the entertainment industry. They tend to be independent, bright, original, and artistic, but also colourful and nonconforming. People with low scores tend to be described as slow to anger, practical, and orderly.

If a person receives a high score on the Aesthetic scale, this suggests that they are interested in artistic and cultural subjects, that they are imaginative and potentially creative, and will do their best work in environments that allow experimentation, exploration, and creativity. Hogan et al., (2007) argue that those with high scores on this scale are often described by others as unpredictable, easily bored, and testing the limits.

### **Related Areas**

There is research in related areas which informs this study. There is a scattered literature on personality and ability correlates of preferences in art (Chamorro-Premuzic & Furnham, 2004; McManus, & Furnham, 2006; Silvia 2006, 2007), architecture (Cleridou & Furnham, 2014; Cook & Furnham, 2012), film (Swami, Stieger, Pietschnig, & Voracek, 2010), music (Rawlings, Barrantes-Vidal, & Furnham, 2000), and the performing arts (Davison, & Furnham, 2018). Reviews in this field (Swami & Furnham, 2014, 2019) have suggested links to personality traits, particularly Openness-to-Experience is related to artistic preferences, where genres or styles that are less popular (i.e. abstract, complex vs simple representational art). There is also an extensive literature on the relationship between creativity and “madness” that informs this literature (Furnham, 2018, 2019) The consistent and robust finding of the correlation between Openness-to-Experience and artistic preferences for the majority of artistic styles differentiated this personality

variable from others that only relate to specific types of preferences. Chamorro-Premuzic, Furnham and Reimers (2007) conducted one of the largest studies in the field of aesthetics with 91,162 participants and revealed that indeed Openness was the best predictor of overall preferences for art stimuli. Open individuals were found to be more accepting of novel experiences and were more likely to pursue artistic activities as well as enjoy art in general

There have also been studies which have looked at the different personality profile of arts vs science students. Furnham and Crump (2013) compared the personality and ability profile of students who had graduated in the arts and scientists. They found using the 16PF personality scale that Compared to Science students, Arts students scored higher on Factors A(Warmth), I(Sensitivity), L(Vigilance), M(Abstractness),Q1 (Open-to-Change),T (Tension) and GMAVerbal but lower on Factor G (Rule Conscientiousness),Q3(Perfectionism), Raven's Progressive Matrices and GMA Numerical.

There is also a controversial literature on the association between particular mental illnesses (schizophrenia, schizotypy), and creative pursuits in the arts and sciences (being a comedian, poet or painter).The literature is mainly concerned with creativity rather than an interest in art or AM. The most well researched “psychopathology candidate” for explaining creativity are the sub-clinical (note not clinical) personality disorders (PDs) (Furnham, 2017). Schizotypy has been most consistently related to creativity and AM. Some have suggested that both Histrionic and Narcissistic personality disorder (Kehagia, 2009) and Aggressive personality disorder are also implicated in the process of creativity and AM.

For instance, Furnham, Hughes and Marshall (2013) argued OCD is characterised by intrusive, anxiety causing thoughts (obsessions) which the individual attempts to relieve through repetitive or ritualistic actions (compulsions), which can be either observable behaviours or mental processes. Obsessive-Compulsive individuals tend to exhibit a preoccupation with orderliness and perfectionism at the expense of efficiency, openness and flexibility. Narcissism is characterised

by grandiosity, a sense of entitlement and a belief by the individual that they are special and unique, and is often accompanied by arrogant behaviour and a lack of empathy. They suggested that if high levels of creativity are linked to this idea of the very flexible, overinclusive thinking found at high levels of psychoticism, it would follow that those with particularly rigid thinking styles, such as those arguably seen in individuals with Obsessive-Compulsive traits, would exhibit lower levels of creativity. In the case of individuals displaying Narcissistic traits, one would expect high levels of creativity to be seen when using self report methods of creativity, as Narcissistic individuals are likely to consider themselves highly creative, but not necessarily when using more objective methods.

### **Personality Traits and Disorders**

As noted, there have been a number of studies that have examined personality and intelligence correlates of art interests and preferences (Chamorro-Premuzic & Furnham, 2004; Cotter, Silvia, & Fayn, 2018; Cotter & Silvia, 2019; McManus & Furnham, 2006; Swami & Furnham, 2014, 2019).

In this study we looked at personality correlates of Aesthetic Values. The “normal” personality traits were measured using the Hogan Personality Inventory (Hogan et al, 2007). The HPI assesses seven personality traits: *Adjustment* (Neuroticism); *Ambition* (Leadership and Status Seeking); *Sociability* (Extraversion); *Interpersonal Sensitivity*: (Agreeableness); *Prudence* (Conscientiousness); *Inquisitive* (Openness); *Learning Approach* (Need for Intellectual Stimulation) (Hogan et al., 2007).

It has been suggested personality traits can be reduced to a two higher order factors, Alpha and Beta (Digman, 1997). Alpha is a combination of Agreeableness, Conscientiousness and Emotional Stability (the inverse of Neuroticism). Beta is a combination of Extraversion and Intellect/Openness. An alternative explanation is "communion" and "agency" for Alpha and Beta respectively. Agency refers to "strivings for mastery, power, self-assertion, and self-expansion" and communion to "the

urge toward community and the relinquishing of individuality". Yet others have suggested that the Alpha and Beta factors might be better interpreted as "stability" and "plasticity". Stability expresses a person's general ability to maintain stable relationships, motivation and emotional states respectively. Plasticity is a combination of positive affect (extraversion) and a general openness to exploration and experience (openness to experience) which is about "cognitive flexibility" or plasticity. We examine the higher order factor structure of the HPI in this study and how they relate to AM.

Based on the previous literature we predict (H1) Inquisitiveness (Openness) would be correlated with AM, as an interest in novel, and usual things characterises this trait. This trait has been implicated in many studies on personality and art attitudes, knowledge and preference (Swami & Furnham, 2019). It was further hypothesised that (H2) Prudence (Conscientiousness) would be negatively correlated with AM.

This study also used the Hogan Developmental Survey now extensively used in organisational research and practice to measure sub-clinical personality disorders in the 'normal population' (De Fruyt et al, 2009). The HDS focuses only on the core construct of each disorder from a dimensional perspective (Hogan & Hogan, 2001, p.41). Various relatively studies have used the HDS and have shown it to be a robust, reliable and valid instrument (Furnham & Trickey, 2011; Furnham, Hyde & Trickey, 2013). It should be noted that these personality disorders are grouped along different axes or different clusters. When clustering three are usually made: A: Odd/Eccentric (Paranoid, Schizoid, Schizotypal); B: Dramatic/Emotional/Erratic (Antisocial, Borderline, Histrionic, Narcissistic) and C: Anxious/Fearful (Avoidant, Dependent and Obsessive-Compulsive). These three clusters have also been described as *Moving Against Others* (by deliberately manipulating and controlling others), *Moving Toward Others* (by building alliances with others) and *Moving Away From Others* (by maintaining their distance and pushing others away (Hogan et al, 2007). We examine the higher order factor structure of the HPI in this study and how they relate to AM

Indeed, there is an extensive and controversial literature on the relationship between interest and success in creative activities and jobs and mental illness (Furnham 2015, 2017, 2018a, 2019). Of the many disorders apparently related to creativity the most commonly nominated is schizophrenia and schizotypy (H3). There are few data or theorising in this area to formulate hypotheses though it was predicted that the Moving Away Traits: Sceptical (H4), and Reserved (H5) would be negatively correlated with AM while the Moving Against traits, Imaginative (H6) and Colourful (H7) would be positively related to AM.

## **Method**

### *Participants*

*Group 1.* There were a total of 1458 participants of whom 874 were males and 584 females. Their mean age was 36.14 years (SD=12.90yrs). They were all middle to senior managers of various British and European organisations.

*Group 2.* There were a total of 2548 participants of whom 1744 were males and 884 females. Their mean age was 40.16 years (SD=16.33yrs). They were also all middle to senior managers being assessed for selection, development and promotion.

### *Measures*

1. *Values.* The Motives, Values, Preferences Inventory (MVPI, Hogan et al., 2007) measures 10 Motives/Preferences. Each scale is composed of five themes: a) Lifestyles, which concern the manner in which a person would like to live, b) Beliefs, which involve 'shoulds', ideals and ultimate life goals, c) Occupational Preferences, which include the work an individual would like to do, what constitutes a good job, and preferred work materials, d) Aversions, which reflect attitudes and behaviours that are either disliked or distressing, and e) preferred Associates, which include the kind of persons desired as co-workers and friends. MVPI scores are quite stable over time, with test-retest reliabilities



ranging between .64 and .88 (mean = .79). More than 100 validation studies have been conducted on the MVPI with results indicating that the inventory is effective in predicting. In this study we are only using the AM scale form this measure.

2. *Personality Disorders*. Hogan Development Survey (Hogan et al., 2007) is a measure of the personality disorders expressed in non-clinical language. The survey includes 154 items, scored for 11 scales, each grouping 14 items. Respondents are requested to 'agree' or 'disagree' on a 7 point scale with the items. The HDS has been cross validated with the MMPI personality disorder scales. It has considerable evidence of satisfactory reliability and validity (Fico et al., 2000; Hogan & Hogan, 2001). Furnham and Crump (2005) show the overlap of the HDS and DSM-IV disorder terminology. The titles given for the DSM-IV disorders as used by the HDS are *Borderline-Excitable*; *Paranoid-Vigilant*; *Avoidant-Cautious*; *Schizoid-Reserved*; *Passive Aggressive-Leisurely*; *Narcissistic-Bold*; *Antisocial-Mischievous*; *Histrionic-Colourful*, *Schizotypal-Imaginative*; *Obsessive Compulsive-Diligent*; and *Dependent-Dutiful*. There are good British norms for this measure (Furnham & Trickey, 2011) and it has been used in various recent studies (Furnham et al. 2012, 2013, 2014).
3. *Personality*. Hogan Personality Inventory (Hogan et al., 2007) is a measure of normal personality functioning closely aligned to the Big Five. It measures seven dimensions of personality and was initially developed in 1976. It has 7 domains and 41 facets measured by 206 items. There is a strong conceptual overlap with the Big Five though the HPI uses different label: HDS *Adjustment* for (low) Neuroticism; HDS *Ambition and Sociability* for Extraversion; HDS *Inquisitive and Learning Approach* for Openness; HDS *Interpersonal Sensitivity* for Agreeableness; and HDS *Prudence* for Conscientiousness.

The HDS also has a measure of Social Desirability or impression management which can be used to detect faking of various kinds. This can always be used in regressions to attempt to control for this issue. Overall the HPI has impressive evidence of reliability and validity and used in many studies (Hogan et al. 2007).

## **Procedure**

Data for the two groups were obtained from two consultancies. In the first group, participants completed the tests online before attending either training or coaching sessions where they were given full feedback on their test results. In the second group, participants were required to attend a middle management assessment centre where they completed the questionnaires. The assessment was aimed at determining the suitability of each manager for promotion. Each manager was given feedback on the results, including how they related to the test norms as well as to their colleagues. They granted permission for anonymised data to be used in research. Departmental ethics permission was sought and received.

## **Results**

### 1. Correlations

Insert Tables 1 and 2 here

Table 1 shows the correlations between the AM score and the personality trait variables for both groups. The correlations between the two groups are very similar and indicates that the highest correlation was for Inquisitive, then Leaning Approach and then Sociability. Both Adjustment and Prudence were negatively correlated. In the terminology of the Big Five, AM is positively associated with Openness and Extraversion, and negatively associated with Conscientiousness and Neuroticism. This confirms H1, and H2 . It should however be noted that even the significant

correlations were modest the highest being for Inquisitive which was  $r > .30$ . Overall, it may be concluded that, at best, personality is very modestly related to AM.

Table 1 also shows the Exploratory Varimax rotated factor analysis. Various other rotations were also considered but the results remained very similar. These results yielded a clear, replicated two-factor structure consistent with past studies, namely the Alpha Beta classification, hence no further analysis (e.g. CFA) was thought necessary as this was not the focus of the study.

Table 2 shows the correlations between the AM score and the disorder variables for both groups. The correlations between the two groups is very similar and indicates that the highest correlation was for Imaginative, Colourful, Mischievous and Bold which are all Cluster B disorders (Moving Against People). The terminology of DSM these were Schizotypal, Histrionic, Anti-social and Narcissistic. This confirms H3, H6 and H7. Again, the size of the significant correlations was very modest only one (Imaginative/Schizotypal) being  $r < .30$ .

Table 2 also shows the Exploratory Varimax rotated factor analysis. Various other rotations were also considered but the results remained very similar. These results yielded a three-factor structure consistent with past studies, namely the Cluster A, B and C classification, hence no further analysis (e.g. CFA) was thought necessary.

## 2. Regressions

Insert Table 3 here

Whilst correlations show the relationship between all the different variables regressions indicate more clearly the relative influence of each on the criterion score. Table 3 shows the results of two identical regressions for sample 1 and 2. For both, the criterion variable was the AM score. In a stepwise regression first age and sex were entered, then social desirability, then the seven traits. Results were similar for both analyses. Older females tended to have higher scores yet

those factors accounted for very little of the variance (1 to 2 %). The results were not affected by social desirability. The consistent findings for the personality traits indicated the more highly people score on Inquisitive and to a lesser extent on Interpersonal Sensitivity and the lower they score on Prudence, Adjustment and Ambition the more they had AM. Personality factors accounted for around a fifth of the variance.

This regression was repeated but this time using the “higher-order” alpha-beta model. Group 1 was significant ( $F(5,1452)= 6.19, p<.001, \text{Adj } R^2=.04$ ) and indicated one factor significant predictors Alpha: ( $\beta=.01, t= 0.50$ ) and Beta ( $\beta =.08, t=2.71, p<.001$ ). The results for the second group were different ( $F(5, 2563)=57.50, p<.001, \text{Adj } R^2 =.10$ ) and indicated two significant predictors Alpha ( $\beta=-.14, t=6.64, p<.001$ ) and Beta ( $\beta=.31, t=15.31, p<.001$ ). However, it shows Beta factors positively are more correlated with AM than Alpha factors which are negatively associated with AM.

#### Insert Table 4

Table 4 shows the two regressions for the eleven personality disorder factors. Gender, age and social desirability results were similar to the analysis for the personality traits. The consistent findings for the two studies indicated that those who scored higher on Imaginative and Dutiful, but lower on Excitable and Reserved scored higher on AM. The dark side factors added 12 - 15% of the variance.

Thereafter, as above the regressions were run using the three “higher order”, rather than the eleven, factors. In group 1 the regression was significant ( $F(6,1451)=26.35, p<.001, \text{Adj } R^2= .10$ ). All three higher order factors were predictive: Moving Away ( $\beta=.11, t=4.10, p<.001$ ), Moving Against ( $\beta=.27, t=10.12, p<.001$ ) and Moving Toward Others ( $\beta= -.07, t= 2.71, p<.001$ ). In group 2, the regression was also significant ( $F(6,2277)= 38.17, p<.001, \text{Adj } R^2=.09$ ). All three

higher order factors were predictive: Moving Away ( $\beta = .08, t=4.17, p<.001$ ); Moving Against ( $\beta =.27, t=13.27, p<.001$ ) and Moving Toward Others( $\beta =-.03, t=1.19$ )

Finally, two stepwise regressions were run, one for each study with AM as the criterion. This was to examine the relative predictive power of the higher-order traits and disorders to explain the AM score. First, gender and age were entered, followed by social desirability and then the five higher order factors from both the HPI and HDS. This was significant for group 1 ( $F(8,1449)=23.40, p<.001, \text{Adj } R^2=.12$ ). All five factors were significant: Alpha ( $\beta=.17, t=5.13, p<.001$ ), Beta ( $\beta= -.03, t=0.64$ ), Moving Away ( $\beta=-.20, t=5.04, p<.001$ ), Moving Against ( $\beta=.27, t=8.12, p<.001$ ) and Moving Toward ( $\beta=-.09, t=3.21, p<.01$ ). The regression was also significant for group 2 ( $F(8,2275)=41.64, p<.001, \text{Adj } R^2=.13$ ). Three of the five higher order factors were significant: Beta ( $\beta=.27, t= 9.55, p<.001$ ); Moving Away ( $\beta=-.19, t=6.65, p<.001$ ) and Moving Against ( $\beta=.11, t=4.42, p<.001$ ). These analyses suggested that 12-13% of the total variance in AM could be explained by the higher order traits and disorders.

## **Discussion**

This study examined personality correlates of AM. Researchers in vocational psychology like Holland (1973) or counselling psychology (Nauta, 2010) have been attempted to identify people interested in “artistic pursuits”. There have also been several/many studies on the link between particular disorders and creative, artistic people which would suggest that personality disorder factors would be related to those with AM (Furnham 2015,2017,2018ab, 2019).

This study showed that both personality traits and disorders were modestly related to AM. Neuroticism (low Adjustment), Open-to-Experience (Inquisitive), but low Conscientious (Prudence) people had high AM. This concurs with the literature on people choosing arts vs sciences in school and university (Furnham & Crump, 2013), as well as those interesting in art (Chamorro-Premuzic & Furnham, 2004). Indeed, the regressions for both groups showed that

the personality factors accounted for around 20% of the variance after demographic and social desirability factors were taken into consideration. Indeed, it was the two HPI traits that measured Openness (Curiosity and Learning approach) that were most related to AM. Further, those with high AM scores tended to be low on Adjustment and on Prudence: the two factors that are most related to success at work (Furnham, 2018a). This would suggest that people with strong AM would be unhappy and unproductive in many jobs, even some artistic jobs.

This may be one of the first studies to relate AM to *all* personality disorder traits simultaneously. Whilst nearly all the correlations between the eleven disorder traits and AM were significant and positive (Dependent and Dutiful were exceptions) it was clear that Imaginative (i.e. Schizotypal) was the highest. The regressions confirmed this showing few significant relations except Imaginative which accounted for most of the variance.

The regressions with the higher order factors were also illuminating. As expected, it was the Beta/Agency/Plasticity factor that was most closely related to AM. Similarly, it was the Moving Against others (Cluster B) that was most related to AM. It is the four disorders in this factor that are paradoxically related to leadership emergence but not overall success, because they are not good at establishing and maintaining good relationships and show relatively low self-awareness.

However, perhaps the most important finding lay in the last four step regression: demography, social desirability, personality then disorder traits. The results from both groups were broadly similar with 12 and 13% of the variance accounted for. It was the Moving Against Others factor that accounted for most of the variance.

The criterion variable in this study AM was defined as having interest in art, literature, and music, and a lifestyle marked by issues of imagination, culture, and good taste. They tend to be independent, bright, original, and artistic, but also colourful, nonconforming, and impatient. People with low scores on AM tend to be described as slow to anger, practical, and orderly. One question is what are the markers of AM and what advice would one give those who wanted

vocational advice or those who thought of hiring those with elevated score? Many have observed how unhappy artistic people are in “conventional jobs”, as well as volatile and unpredictable even in artistic jobs.

One issue of interest here is the extent to which it is advisable to promote those who are successful in AM jobs to managerial jobs. This was the issue addressed by Furnham et al. (2016) who considered whether people who were suited to, and successful at, a sales job would be equally happy and productive as managers of sales staff. Results from this study suggest that the profile of those attracted to AM are almost opposite of those who succeed in managerial and leadership roles: namely high on Adjustment (low Neuroticism) and Prudence (Conscientiousness). As in sales, therefore this may present problems for people in artistic and creative industries, namely whether it is wise to promote happy and successful “artists” of one type or another, into administrative and managerial job

Like all studies this was not without limitations. Although we had a large sample all the data was self-report. It would be desirably to know more about the participants’ particular artistic preferences, training and pastimes as well as their abilities in a range of spheres including creativity and the arts. It would also be interesting to know about their job-history with respect to both engagement and success.

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Table 1: Means, SDs, Factor Analytic Results, and Correlations between HPI scales and AM for both Groups

		Group 1			Group 2			Group 1		Group 2	
		Mean	SD	r	Mean	SD	r	F1	F2	F1	F2
Adjustment	The Adjustment scale reflects the degree to which a person is calm and even tempered or conversely, moody and volatile. High scorers seem confident, resilient, and optimistic. Low scorers seem tense, irritable, and negative	26.78	6.68	-.13*	29.37	5.66	-.11*	.24	<b>.81</b>	.24	<b>.79</b>
Ambition	The Ambition scale evaluates the degree to which a person seems leaderlike, seeks status, and values achievement. High scorers seem competitive and eager to advance. Low scorers seem unassertive and less interested in advancement.	24.35	4.53	-.06*	25.81	3.55	-.03	<b>.61</b>	.45	<b>.64</b>	.38
Sociability	The Sociability scale assesses the degree to which a person appears talkative and socially self-confident. High scorers seem outgoing, colourful, and impulsive, and they dislike working by themselves. Low scorers seem reserved and quiet; they avoid calling attention to themselves and do not mind working alone.	14.82	4.51	.15**	15.83	4.38	.16**	<b>.76</b>	-.01	<b>.79</b>	-.08
Interpersonal Sensitivity	The Interpersonal Sensitivity scale reflects social skill, tact, and perceptiveness. High scorers seem friendly, warm, and popular. Low scorers seem independent, frank, and direct.	18.70	2.61	.08*	19.43	2.14	.08*	.19	<b>.64</b>	.20	<b>.65</b>
Prudence	The Prudence scale concerns self-control and conscientiousness. High scorers seem organised, dependable, and thorough; they follow rules and are easy to supervise. Low scorers seem impulsive and flexible. They tend to resist rules and close supervision; however, they may be creative and spontaneous.	19.60	4.20	-.20*	21.02	4.24	-.14*	-.41	<b>.74</b>	-.12	<b>.84</b>
Inquisitive	The Inquisitive scale reflects the degree to which a person seems curious, adventurous, and imaginative. High scorers tend to be quick-witted and visionary, but they may be easily bored and not pay attention to details. Low scorers tend to be practical, focused, and able to concentrate for long periods.	14.25	4.58	.32**	16.01	4.49	.35**	<b>.70</b>	-.00	<b>.75</b>	.04
Learning Approach	The Learning Approach scale reflects the degree to which a person enjoys academic activities and values education as an end itself. High scorers tend to enjoy reading and studying. Low scorers are less interested in formal education and are more interested in hands-on-learning on the job.	8.99	3.07	.19**	9.26	3.01	.19**	<b>.50</b>	.13	<b>.56</b>	.28
							<b>Eigenvalues</b>	<b>2.19</b>	<b>1.55</b>	<b>2.59</b>	<b>1.42</b>
							<b>Variance</b>	<b>31.31</b>	<b>2.22</b>	<b>37.09</b>	<b>20.41</b>

\*p<.05 \*\*p<.01

Table 2: Means, SDs, Factor Analytic Results, and Correlations between HDS scales and attribution for both Groups

HDS Scales	Group 1			Group 2			Group 1			Group 2		
	Mean	SD	r	Mean	SD	r	F1	F2	F3	F1	F2	F3
Excitable Concerns being overly enthusiastic about people or projects, then becoming disappointed with them. Result: seems to lack persistence	3.31	2.83	.10*	2.94	2.61	.06*	.04	<b>.78</b>	-.02	.03	<b>.73</b>	.00
Sceptical Concerns being socially insightful, but cynical and overly sensitive to criticism. Result: seems to lack trust.	4.79	2.46	.03	4.87	2.45	.05*	.38	<b>.64</b>	.11	.44	<b>.58</b>	.11
Cautious Concerns being overly worried about being criticised. Result: seems resistant to change and reluctant to take chances.	3.69	2.70	-.05*	3.25	2.61	.04	-.43	<b>.65</b>	.27	-.32	<b>.70</b>	.28
Reserved Concerns lacking interest in or awareness of the feelings of others. Result: seems to be a poor communicator.	4.11	2.10	.00	4.11	2.14	-.03	-.12	<b>.67</b>	-.29	-.12	<b>.71</b>	-.24
Leisurely Concerns being independent, ignoring others' requests, and becoming irritable if they persist. Result: seems stubborn, procrastinating, and uncooperative.	5.25	2.36	.10*	4.85	2.33	.04	.22	<b>.59</b>	.27	.21	<b>.58</b>	.32
Bold Concerns having inflated views of one's competency and worthy. Result: seems unable to admit mistakes or learn from experience	7.22	2.78	.14*	7.36	2.72	.14**	<b>.79</b>	.05	.08	<b>.76</b>	.00	.14
Mischievous Concerns being charming, risk-taking, and excitement –seeking. Result: seems to have trouble maintaining commitments and learning from experience.	6.94	2.54	.14*	6.70	2.45	.15**	<b>.77</b>	.04	-.19	<b>.73</b>	.04	-.14
Colourful Concerns being dramatic, engaging, and attention-seeking. Result: seems preoccupied with being noticed and may lack sustained focus.	7.74	3.02	.16**	7.53	2.93	.17**	<b>.73</b>	-.26	-.13	<b>.73</b>	.28	-.10
Imaginative Concerns thinking and acting in interesting, unusual, and even eccentric ways. Result: seems creative but possibly lacking in judgement.	5.55	2.44	.35**	5.49	2.41	.31**	<b>.66</b>	.16	-.02	<b>.69</b>	.14	-.02
Diligent Concerns being conscientious, perfectionistic, and hard to please. Result: tends to disempower staff.	9.28	2.58	-.10*	9.07	2.42	-.02	.04	.05	<b>.76</b>	.06	.00	<b>.73</b>
Dutiful Concerns being eager to please and reluctant to act independently. Tends to be pleasant and agreeable, but reluctant to support subordinates.	7.62	2.33	-.04	7.31	2.22	-.01	.27	.03	<b>.71</b>	-.15	.08	<b>.72</b>
<b>Eigenvalues</b>							<b>2.77</b>	<b>2.37</b>	<b>1.25</b>	<b>2.53</b>	<b>2.30</b>	<b>1.35</b>
<b>Variance</b>							<b>25.19</b>	<b>21.57</b>	<b>11.38</b>	<b>22.93</b>	<b>20.90</b>	<b>12.32</b>

\*p<.05    \*\*p<.01

Table 3: Results for the Regression using the HPI for both Groups

	Group 1		Group 2	
	Beta	t	Beta	t
Age	.05	2.28**	.05	2.63*
Gender	.14	5.35**	.14	8.91***
SD	.03	1.40	.01	0.57
Adjustment	-.11	3.68**	-.10	4.65**
Ambition	-.12	4.04***	-.09	4.15**
Sociability	.03	0.97	.05	2.26*
Interpersonal Sens	.12	4.02**	.08	3.85**
Prudence	-.15	5.91**	-.11	5.07**
Inquisitive	.31	11.67***	.35	17.66***
Learning Approach	.14	5.90**	.11	5.47**
	F(2, 1455) = 8.21***	Adj R <sup>2</sup> = .01	F(2, 2566) = 20.13***	Adj R <sup>2</sup> = .02
	F(3, 1454) = 6.85***	Adj R <sup>2</sup> = .02	F(2, 2565) = 13.80***	Adj R <sup>2</sup> = .02
	F(10, 1447) = 38.63***	Adj R <sup>2</sup> = .21	F(9, 2559) = 67.58***	Adj R <sup>2</sup> = .21

\*\*\* =  $p < .001$ ; \*\* =  $p < .01$ ; \* =  $p < .05$

Table 4: Results for the Regression using the HDS for both Groups

	Group 1		Group 2	
	Beta	t	Beta	t
Age	.05	2.26**	.05	2.22*
Gender	.14	5.35**	.12	5.74**
SD	.05	1.76	.02	0.97
Excitable	.04	1.34	-.03	0.43
Sceptical	.09	2.95**	.03	1.05
Cautious	-.12	3.47**	-.13	4.81**
Reserved	-.03	1.27	-.01	0.44
Leisurely	.05	1.81	.03	1.62
Bold	.05	1.64	.05	1.07
Mischievous	-.02	0.71	-.07	1.86
Colourful	.04	1.29	.07	2.07
Imaginative	.34	11.82***	.26	11.31***
Diligent	-.09	3.41**	-.01	0.42
Dutiful	-.03	1.11	-.05	1.97
	F(2,1455) = 8.81***	Adj R <sup>2</sup> = .02	F(2,2280) = 19.42**	Adj R <sup>2</sup> = .01
	F(3, 1454) = 6..94**	Adj R <sup>2</sup> = .03	F(3, 2279) = 11.24***	Adj R <sup>2</sup> = .02
	F(14,1443) = 20.31***	Adj R <sup>2</sup> = .20	F(14, 2268) = 23.71***	Adj R <sup>2</sup> = .12

\*\*\* =  $p < .001$ ; \*\* =  $p < .01$ ; \* =  $p < .05$