



## Personality and management level: Traits that get you to the top

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### ARTICLE INFO

#### Keywords:

Personality  
Management level  
Gender  
Age

### ABSTRACT

In this study we investigated whether personality traits differ among people at difference management levels, controlling for demographic variables. In total, 10,836 people completed a personality test and provided information about their managerial level. Managerial level was positively associated most with traits Risk Aversion, Ambiguity Acceptance and Conscientiousness. Analysis of covariance and regressions indicated that personality traits accounted for around 6.6 % of the variance above the demographic variables, particularly age. Results are broadly in alignment with previous studies in this area, but suggested the importance of two traits that are not explicitly assessed in the Big Five Factor Models: Ambiguity Acceptance and Attitude to Risk (Courage). Implications and limitations are acknowledged.

### 1. Introduction

For well over fifty years differential psychologists have argued that personality traits correlate with, and predict, individual work performance, satisfaction, and success, as assessed, in part, by promotions to senior positions (Judge & Bono, 2000; Kajonius & Carlander, 2017; Nieß & Zacher, 2015; Richardson & Norgate, 2015). There is also a literature on dark-side personality and management level that demonstrates that sub-clinical personality disorders are differently associated with seniority in managers (Göttsche-Astrup, 2018; Palaïou & Furnham, 2014; Winsborough & Sambath, 2013). It has therefore been suggested that understanding an individual's personality profile is important for both the selection and training of successful middle and senior managers, and business leaders (Ling et al., 2019; Spark et al., 2021; Sutin et al., 2009). Research in this area could also be used to answer the very important questions about leadership effectiveness vs emergence (Conard, 2020), as well as whether personality traits change much as a function of experience (Roberts et al., 2006).

One way of validating a theory of talent/potential is to evaluate people at different managerial levels controlling for factors such as sex, age, ethnicity and education, given that leaders still seem to be predominantly older males, with better educational qualifications. The assumption is that certain traits like Adjustment (low Neuroticism) and Conscientiousness are both seen to be, and actually are, determinants of many work-related behaviours that make people better leaders and managers in any, and all, organisations (Pendleton et al., 2021). The

assumption is that personality factors play an important role in “climbing the organizational ladder”, sometimes called the “greasy pole” (Ahmetoglu et al., 2010; Göttsche-Astrup et al., 2016). Thus, we would expect the trait profile of leaders to be different from those who do not attain that level. Indeed, this is the focus of this paper.

It is, of course, possible that success, as measured by promotion, changes people (Hirschi et al., 2021), though there is less evidence for this, or that the effects are very strong. One highly relevant issue for this study is the stability of personality over time. Researchers agree that there is evidence of *both* stability *and* change. From these studies Furnham and Sherman (2023) drew the following conclusions: (1) personality seems most stable between the ages of 30 and 60 years, particularly using established Big Five measures to assess it, (2) there are modest increases in Emotional Stability and Agreeableness over this period with Extraversion and Neuroticism showing least change (both with a slight decline) and Conscientiousness showing most change (an increase), and (3) males seem more stable than females. There is less work however about changes in intelligence and specific abilities. Thus, while there may be some reciprocal influence it is assumed that stable personality traits in part account for success and promotion at work and the latter have a relatively minor impact on personality structure or functioning (Furnham & Cheng, 2015). While most organisations believe in both the importance of selection *and* training of managers, they tend to identify traits that are associated with leadership *and* the learning of those skills (Göttsche-Astrup, 2018; Pendleton et al., 2021).

Clearly there are a number of factors that relate to climbing the

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<https://doi.org/10.1016/j.paid.2023.112108>

Received 4 October 2022; Received in revised form 31 December 2022; Accepted 25 January 2023

Available online 8 February 2023

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managerial ladder, though personality remains an important one, and which is the focus of this paper (Conard, 2020). For instance, networks or particular groups (based on beliefs, education or expertise) attempt and succeed to get “their people” promoted to positions of power irrespective of their abilities and temperament. Equally in some organisations it is experience, that is how long one works in an organisation, that is the primary determinant of promotion meaning essentially that age is the most powerful predictor of managerial level.

## 2. Traits and management level

Around half a dozen studies in different countries and using very different personality measures have used *management level* (junior, middle, senior) as a criterion to try to understand what factors lead promotions and hopefully thence success in the role (Ahmetoglu et al., 2010; Bucur, 2011; Furnham et al., 2007; Ion et al., 2019; Treglown & Furnham, 2022). Studies in this area have used different measures such as the Firo-B, Hogan Development Survey, MBTI, NEO-PI, and TEiQ (Furnham et al., 2007; Furnham & Crump, 2015; Moutafi et al., 2007; Treglown & Furnham, 2022). Most confirmed their hypotheses based on the trait model, focusing particularly on Conscientiousness and Neuroticism.

In an important recent study, Asselmann et al. (2022) examined personality differences between leaders and non-leaders as well as personality changes before and after becoming a leader. They found “leaders-to-be” were more Extraverted, Open, Emotionally Stable, Conscientious, and willing to take risks, felt they had greater control, and trusted others more than non-leaders. They also found personality changed in emergent leaders: they became less Extraverted, less willing to take risks, and less Conscientious but gained self-esteem.

In this study, based on a large international data set, we were able to explore trait correlates of managerial level using a new personality test specifically designed to assess behaviour at work (MacRae & Furnham, 2020).

## 3. Controlled variables

It is clearly the case that management level is related to *age*, as people with more experience tend to be promoted. Similarly *educational level* often relates to management level particular in some sectors which require considerable technical expertise and university level education (Pendleton et al., 2021). There is also a growing literature on *sex* and managerial level, which suggests, for various reasons, that females are under-represented at senior levels either because of their choice not to apply or else they are not chosen (Davies et al., 2017). We expect that these three variables will account for a significant amount of variance in explaining managerial level, hence we attempt to control for them, which has not always been done in previous studies. We also had data on the ethnicity of the participants which we used in the final regression. However, we did not have data on their employment history such as how long they took to be promoted, or their success in the role, which is very desirable but unavailable.

## 4. This study

In this study we used the High Flyer Trait Inventory (HPTI) (MacRae & Furnham, 2020) which was particularly designed for personality assessment at work. The test measures six traits, four of which are well established in the Big Five: Conscientiousness, Adjustment (low Neuroticism), Curiosity (Openness), Competitiveness (low Agreeableness), Ambiguity Acceptance, Courage or Approach to Risk. Four of these variables are associated with the Big Five, while there are two variables that are not covered by that model.

A number of papers have used the HPTI (Furnham & Impellizzeri, 2021; Furnham & Treglown, 2018, 2021a, 2021b; Furnham & Treglown, 2021a, 2021b). The psychometric properties of the measure have

been reported (MacRae & Furnham, 2020) of which the most relevant is the study by Teodorescu et al. (2017). Their results indicated HPTI personality traits relate to subjective and objective measures of success, with Conscientiousness being the strongest predictor. However, Teodorescu et al. (2017) found Approach to Risk and Ambiguity Acceptance was most related to self-assessed success at work, which we believed would differentiate in management level in this study.

*Ambiguity Acceptance* (or Tolerance of Ambiguity) assesses how an individual or group processes and perceives unfamiliarity, ambiguity or incongruence. It is a well-established individual difference variable also known as *Uncertainty Avoidance* (Furnham & Marks, 2013). Those who are tolerant of ambiguity perform well in new or uncertain situations, adapt when duties or objectives are unclear, and are able to learn and function in unpredictable times or environments (Herman et al., 2010). They tend to embrace, rather than avoid, ambiguity. Given the nature of many senior management positions we assumed that Tolerance of Ambiguity would be related to management level with most senior managers being more comfortable and confident when faced with ambiguity and uncertainty (de Vries, 2021).

*Approach to Risk* or Courage is the ability to combat or mitigate negative or threat-based emotions and broaden the potential range of responses. Courage is the ability to combat or mitigate negative or threat-based emotions and broaden the potential range of responses. Hannah et al. (2007) suggest the courageous individual uses the positive emotion, courage, to mitigate fear of interpersonal conflict or reprisal to confront the behaviour. Unchecked fear restricts the potential range of responses, and typically leads to behaviours like avoidance or contrived ignorance. Whereas Courage is exhibited as the willingness to confront difficult situations and solve problems in spite of adversity. Again, we expected this to be related to management level with the highest managers scoring highest on this factor.

Studies on the Big Five and leadership/managerial have consistently identified two factors, namely Conscientiousness and Neuroticism, and to a lesser extent Openness, to be associated with managerial success (Furnham, 2018). Similarly, the studies on management level have identified these factors when assessed (Asselmann et al., 2022). We assumed we would find the same results in this study: more senior people would be better Adjusted as well more Conscientious and Open.

Based on the previous literature we predict management level would be related to all six factors, such that those who scored *high on all six factors* would be most likely to be associated with more senior management positions.

## 5. Method

### 5.1. Participants

In all 10,836 participants were assessed in the UK by a well-established British psychometric test publisher, with participants taking cognitive ability and emotional intelligence assessments as a part of selection and development programmes (41 % female, 59 % male). Participants who had taken both assessments were included in the overall sample. The mean age of the sample was years 41.9 years ( $SD = 12.14$  years). They were all in full-time employment. Data on the highest level of education achieved was also collected, with the three most frequent educational levels being that 24 % of participants having a postgraduate degree, 61.2 % with bachelor's degrees and 20.2 % with school completion certificates. Participants were primarily White-British (88.1 %). There were also 608 Asians (5.7 %), 207 Blacks/Africans (1.9 %), 59 Chinese (0.5 %), 223 Mixed Race (2.1 %) and 176 “Other” (1.6 %). There was a range of managerial levels in the sample; 21.8 % ( $n = 2362$ ) being non-managers, 14.8 % ( $n = 1602$ ) being first line managers, 26.7 % ( $n = 2898$ ) being middle managers, and 30.8 % ( $n = 3338$ ) being executive or senior managers.

5.2. Test

High Potential Trait Indicator (HPTI) (MacRae & Furnham, 2020). The HPTI is a measure of personality traits, specifically within a workplace context. It is comprised of six factors, outlined above. The inventory is 78 items in length. Each trait was converted into a standardized score to allow for better comparison between traits. The alphas for the traits were: Conscientiousness 0.72; Adjustment 0.82; Curiosity 0.75; Risk-Approach 0.79; Ambiguity Tolerance 0.71; Competitiveness 0.83.

5.3. Procedure

Participants completed both assessments online and were sent an instructional text for each test via email. Participants were volunteers who gave permission for their anonymised data to be used. The tests, which the organisation was licenced to use, could be taken at a time that best suits the participant. The data was collected through a psychometrics company's online tech-portal over a period of around three years which administered the tests where login details provided by the company to each participant. The company data files were consulted to obtain a sample of around 10,000 people.

6. Results

6.1. Correlations between all variables

Table 1 shows the correlations between the factors. The highest correlations indicated that older people, who scored high on Risk Approach and Ambiguity Tolerance, were more likely to be in senior positions. All the correlations between the six personality factors were positive and significant with two being  $r > 0.20$ . This confirmed the major hypotheses in this study.

6.2. Comparison between management levels

Table 2 shows the means, SDs and ANOVA results for the six factors over the four management levels. The results of the post-hoc analysis (Scheffe tests) are also shown. With no exceptions there is a difference between the three highest levels with the top level who score highest on all six factors. The results were most clear for Approach to Risk and Ambiguity Acceptance. In order to compare middle and senior managers on each trait score Cohen's d was computed. These ranged from 0.18 to 0.33.

6.3. Hierarchical regression

A hierarchical regression was then performed with sex, age, education and ethnicity being entered first followed by the six personality factors. Table 3 shows the results of the final regression. The first step

accounted for 26.1 % of the variance and the final step 32.7 % indicating that the traits accounted for 6.5 % of the variance. The results showed: older, better educated males from the native culture were most senior. The two most relevant factors were age and education: those who were older with more work experience and those with higher degrees were more senior.

The results from the second step showed the two most significant traits were those not traditionally assessed in the Big Five, namely Approach to Risk and Ambiguity Acceptance. In the regression however two traits, Adjustment and Curiosity, showed a negative relationship with level, probably because of a suppression effect. The aspects that contributed to their positive correlation were not unique, so the regression attributed the variance explained by them to other traits. What is left is what is unique to those two traits after removing any covariance with the other traits.

7. Discussion

This study is one of many which looks at the personality profile of managers at different levels across a number of organisations. It has the advantage over others for having a very large sample and having a personality test designed specifically for use in the work-place. The results of this study showed a near linear trend on all six traits. Where the study was part replicative in terms of well know Big Five traits the results were clearly in accordance with previous research: Senior leaders tend to be more Conscientious and Open (Curious), but less Neurotic (better Adjusted) and less Agreeable (more Competitive). In lay terminology this suggests most senior managers are hard-working and organised, intellectually open, resilient and tough. Interestingly the most senior leaders were scored significantly more highly than middle managers on all the traits, according to the post-hoc analysis.

The results are however particularly interesting for the two non Big Five factors that appear to be most related to management level. The first is Approach to Risk (or Courage) which seems self-evident (Radomska et al., 2020). Indeed, Asselmann et al. (2022) used a single item in their study ("How do you see yourself: Are you generally a person who is very willing to take risks or do you try to avoid taking risks?") which was clearly related to management level. One of the major roles of any senior manager is risk assessment and appraisal, as well as risk taking. The HPTI has used the concept of Courage as a synonym for Approach to Risk and there is a literature on this concept (Radomska et al., 2020). For instance, in a recent study Oyakawa et al. (2021) found that successful leaders cultivated three practices to confront risk: (a) confronting painful experiences to overcome feelings of powerlessness, (b) mastering their own stories and vulnerabilities as a necessary precondition to recruiting others, and (c) holding themselves and others accountable to public commitments. It is however clear that people can be too high on risk taking making them poor decision makers. In this sense, this factor, like many others would be

**Table 1**  
Correlations between demography, management level and the HPTI traits.

	Mean	SD	1	2	3	4	5	6	7	8	9
(1) Gender	1.59	0.49									
(2) Year of birth	1979.17	9.65	-0.10***								
(3) Education	3.99	1.10	-0.03**	-0.04***							
(4) Management level	2.71	1.15	0.15***	-0.46***	0.14***						
(5) Conscientiousness	64.26	15.45	0.03**	-0.05***	-0.02	0.16***					
(6) Adjustment	62.21	16.35	0.03***	-0.13***	-0.00	0.12***	0.39***				
(7) Curiosity	59.05	13.10	-0.00	-0.02*	0.14***	0.07***	0.29***	0.21***			
(8) Risk approach	59.58	13.77	0.17***	-0.16***	-0.02	0.29***	0.52***	0.48***	0.41***		
(9) Ambiguity acceptance	49.61	12.27	0.07***	-0.17***	0.18***	0.27***	0.15***	0.36***	0.33***	0.41***	
(10) Competitiveness	49.68	13.69	0.15***	0.19***	0.01	0.06***	0.31***	-0.03**	0.10***	0.24***	0.04***

\* p < .05.  
\*\* p < .01.  
\*\*\* p < .001.

**Table 2**  
HPTI trait scores at the different levels.

	1		2		3		4		F	P
	M	SD	M	SD	M	SD	M	SD		
Conscientiousness	60.98 <sup>a</sup>	15.43	62.69 <sup>b</sup>	15.31	64.56 <sup>c</sup>	15.24	67.28 <sup>d</sup>	14.96	86.364	0.001
Adjustment	60.25 <sup>a</sup>	16.21	59.60 <sup>a</sup>	16.10	62.06 <sup>b</sup>	16.34	65.12 <sup>c</sup>	16.12	61.304	0.001
Curiosity	58.46 <sup>b</sup>	12.85	57.16 <sup>a</sup>	12.86	59.10 <sup>b</sup>	13.30	60.42 <sup>c</sup>	13.04	25.074	0.001
Risk approach	53.90 <sup>a</sup>	12.93	57.63 <sup>b</sup>	13.29	60.36 <sup>c</sup>	13.29	64.54 <sup>d</sup>	13.02	321.166	0.001
Ambiguity acceptance	45.52 <sup>a</sup>	10.93	47.02 <sup>b</sup>	11.09	50.11 <sup>c</sup>	11.84	54.05 <sup>d</sup>	12.28	284.300	0.001
Competitiveness	48.47 <sup>a</sup>	14.18	49.61 <sup>b</sup>	13.49	49.64 <sup>b</sup>	13.43	50.76 <sup>c</sup>	13.55	13.107	0.001

Means with similar superscripts (e.g. <sup>a</sup>) are not different from each other.

**Table 3**  
Regression with management level as the criterion.

	B	SE	$\beta$	t
Gender	0.14	0.02*	0.06**	6.64***
Year of birth	-0.05	0.00	-0.43	-47.00***
Ethnicity	0.04	0.01	0.04	4.71***
Education	0.14	0.01	0.13	14.27***
Conscientiousness	0.00	0.00	0.05	4.24***
Adjustment	-0.01	0.00	-0.07	-6.61***
Curiosity	-0.01	0.00	-0.09	-8.64***
Risk approach	0.02	0.00	0.20	16.05***
Ambiguity accept	0.01	0.00	0.13	12.82***
Competitiveness	0.01	0.00	0.06	6.33***
Adjusted R <sup>2</sup>	0.327			
F	442.63			
p	0.000			

\* p < .05.

\*\* p < .01.

\*\*\* p < .001.

curvilinearly related to management level and success. Certainly, this requires further exploration.

The second trait highlighted in this study was Ambiguity Acceptance, also not part of the Big Five but one identified over 70 years ago. It is a concept that still commands attention from a theoretical and measurement point of view (Berenbaum et al., 2008; Hancock & Mattick, 2020; Toh & Miller, 2016). Interestingly, Jach and Smillie (2019) found Tolerance of Ambiguity related to Big Five Openness, Extraversion and low Neuroticism, all of which have been shown to relate to successful leadership and management. The nature of most businesses is to try to understand complex processes and make sense of ambiguity.

In this study the personality factors showed an incremental variance of just over 6 % over the well-established demographic factors known to be related to managerial seniority, like age and education. This begs the question of what other factors lead to promotion, like intelligence or political skill. Moreover, it much be acknowledged that organisations have different criteria for promotion to senior positions, including time spent in the organisation.

Like all others this study had limitations, most obviously in data we *did not have* with regarding the participants. Ideally, we would like to know more about the sector in which they worked as well as how successful they were over time. Their job history and other skills would also give important clues as to how the moved from one managerial level to the other. Most of all is always desirable to have longitudinal data to trace individuals over time, and see the possible effects on individual differences, like EQ and IQ, from taking on more senior management roles. Some of these issues have been explored in other studies (Furnham & Sherman, 2023).

Ideally, the question of “what traits get you to the top” at work is best answered by longitudinal research following individuals with known, psychometrically valid, trait scores upon entry to an organisation, or better still many organisations, and then track how these and other outcome factors like ratings by superiors and work performance leads to promotion to senior positions. Whilst this type of data is highly desirable

it is very difficult to obtain, and inferences have to be made from cross-sectional studies such as this.

We were also reliant on the participants' self-classification of their level which could be a function of many things including the size and structure of the organisation, the history of the organisation and its preferences for job titles. Nevertheless, we believe that using this aggregated data over a very large number of people in different organisations, helps demonstrate the generalisability of the findings.

### Registration

This paper was not pre-registered with the journal.

### CRediT authorship contribution statement

SC and LT collected the data and did the statistical analyses, AF wrote the paper.

### Ethics

This was sought and obtained (CEHP/514/2017).

### Declaration of competing interest

There is no conflict of interest.

### Data availability

This is obtainable from the first author on request.

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