

### **Research Article**

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# How do personality characteristics of students aspiring an audit career align with entrepreneurial aspirations and public service engagement?

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### **Abstract**

This study focusses on personality characteristics, first, as a driver of a student's preference for a master in accountancy. Then, I examine whether the personality characteristics of accountancy students match the personality characteristics driving a person's public service engagement or entrepreneurial aspirations. The paper provides insights about the motivations of accountancy students amongst whom some will be future statutory auditors. A personality driven motivation towards either public service or entrepreneurship might impact behavioural intentions and may have future audit quality implications. I show that especially a lack of the personality characteristic 'openness to experience' characterizes students with a preference for accountancy. The results provide evidence that the personality of accountancy students do not match those of students attracted to either public service or entrepreneurial activities.

## Relevance to practice

This paper shows that those with a preference for a master degree in accountancy are by nature not the (self-perceived) entrepreneurially talented. Neither do they have a personality which drives willingness to fulfil a public task. These findings can have implications for the selection, education and permanent education of accountants and auditors. They can provide new insights on for example diversity and inclusion policies of firms. Further, it can have implications for the design of education and training programs.

# Keywords

Personality characteristics, accountancy students, public service motivation, entrepreneurship

### 1. Introduction

The job of a statutory auditor and especially an audit partner in a commercial audit firm typically embodies two elements: (1) an entrepreneur in the audit market who needs commercial success to stay in business; and (2) a professional who performs an important public task to society. There is a large body of literature which describes the tension between commercialism and the public interest mission of the auditors (Barrett and Gendron 2006; Carnegie and Napier 2010; Dirsmith et al. 2015; Gendron 2002; Hanlon 1996; Malsch and Gendron 2013; Wyatt 2004). Furthermore audit research shows that individual auditor level characteristics can explain variations in

audit quality (Contessotto et al. 2019; Zhou et al. 2016; Gul et al. 2013; He et al. 2018; Knechel et al. 2015; Lennox et al. 2014). The aim of this study is to get a better understanding of personality characteristics of aspiring auditors and their preferences towards commercial and/or professional behaviours.

Zhao et al. (2010) suggest that people seek occupations that match their personality. This raises the question which personality types are attracted to a career in accountancy? The first aim of this study is to examine whether personality characteristics drive a person's study preference, more specifically in this study, a preference



for a master's in accountancy. The insights are relevant to get a better understanding of personality as a driver for a career in accountancy. The second aim of the study is to examine whether the personality characteristics of prospective accountancy students match the personality characteristics of persons attracted to either public service or commercial activities. A natural overrepresentation of preferences towards either commercialism or public interest motivations, may require actions to avoid potential audit quality implications. Therefore, the findings from this study may have practical relevance for the selection, education and permanent education policies of accountants and auditors.

This paper is structured as follows. The next section, section 2, presents the current accounting literature reflecting on personality characteristics and describes the hypotheses tested. Section 3 presents the survey used in this study, the way the data was collected, and the methods applied to test the hypotheses. Section 4 presents the results of the research model. Section 5 concludes this study with a discussion of the findings, implications, and suggestions for further research.

# 2. Personality

The first section of this section summarizes the insights from prior literature on the personality characteristics of accountants and statutory auditors, leading up to hypothesis 1. Section 2.2 introduces an important and specific dilemma of a statutory auditor working in a commercial audit firm, the fulfilment of an important public task in a commercial environment. Sections 2.3 and 2.4 describe the existing literature on the effect of personality on entrepreneurial behaviour and a public service motivation, respectively, leading up to hypotheses 2 and 3.

#### 2.1. The personality characteristics of accountants

Zhao et al. (2010) suggest that people seek occupations that match their personality. This raises the question which types of personality are attracted to a career in accountancy? Prior research provided some evidence on the correlation between one's personality and a preference for an occupation in accountancy. A study of Granleese and Barrett (1990) indicated that accountancy students match the stereotype of being socially conforming, stable, introvert, focused on facts, and serious. Noël and Levas (2003) found that the stereotypical accountant is conservative, retained, conscientious, controlled, and unaware of social signals.

Bailey (2017) investigated the level of psychopathy amongst a group of accountancy students. Psychopathy has been recognized as a personality trait negatively associated with conscience and empathic behaviour (Cleckley 1941, 1976). Psychopathic individuals lack a moral identity and a motivation to behave in an ethical way (Glenn et al. 2010). Bailey (2017) found that accountancy students

score relatively low on psychopathy. These findings are consistent with the findings of the Great British Psychopath Survey (Dutton 2012), which identified accountants as among the least psychopathic professionals.

The well-established Big Five personality factor model of personality structure characterizes a person's personality based on five different factors: (1) extraversion, (2) agreeableness, (3) conscientiousness, (4) neuroticism (or emotionality), and (5) openness to experience.

Farag and Elias (2016) measured the five personality traits distinguished by the Big Five personality factor model with the modified IPIP model of Donellan et al (2006) and found results amongst a group of accountancy students close to the moment of their graduation. They report that accountancy students score relatively high on the personality characteristics agreeableness, conscientiousness, and openness to experience, but score relatively low on extraversion and neuroticism. Previous research has shown that such characteristics positively affected employees' performance (Li et al. 2014). Farag and Elias (2016) found specifically that accountancy students who are open to new experiences strongly believe in the search for knowledge and having a questioning mind, both essential aspects of a successful audit. Their results indicate a positive relationship between the personality characteristics identified in the Big Five model and trait professional skepticism measured by the Hurtt model of professional skepticism (Hurtt 2010). Students exhibiting positive personality traits (i.e., extraversion, agreeableness, conscientiousness and openness to experience) were more likely to have high levels of trait professional skepticism. Students scoring higher on Neuroticism were less likely to have high levels of professional skepticism.

In this study an extension of the Big Five personality models, the HEXACO personality model, is applied which is a six-dimensional personality trait model (Ashton and Lee 2009). This scale includes ten items capturing each of the following six personality traits: (1) honesty-humility, (2) emotionality, (3) extraversion, (4) agreeableness (versus anger), (5) conscientiousness, and (6) openness to experience. The most important addition of the HEXACO model compared to the better established Big Five personality models is its ability to measure integrity-related personality traits, since honesty-humility is added as an additional scale to the model. Due to the importance of integrity for accounting and audit professionals, the HEX-ACO model (60-item scale) is used in the context of the current study. Appendix 1 gives a further explanation of the 60-item HEXACO scale applied in this study, and the personality characteristics identified in the model.

Prior evidence from Farag and Elias (2016) gives indications of the personality characteristics of accountancy students. They found that accountancy students score relatively high on the personality characteristics agreeableness, conscientiousness, and openness to experience, but score relatively low on extraversion and neuroticism on a Big Five personality scale. A more recent

study of Kerckhofs et al. (2021) examines the personality as a driver of graduate business students' decision to start a career in the accounting profession using the Brief HEXACO Inventory (BHI), which is also applied in this study. They found, in contradiction to Farag and Elias (2016), that personality trait openness to experience is negatively associated to a preference for a master in accountancy.

As these personality characteristics are also identified by the HEXACO-models, similar expectations are expressed in hypothesis 1, although there is mixed evidence for the characteristic openness to experience. The HEXACO-models add the personality characteristic honesty-humility to the Big Five model. Based on the findings of Bailey (2017) and the findings of Glenn et al. (2010) which indicates that individuals scoring low on psychopathic individuals have a high moral identity and a motivation to behave in an ethical way, it is expected that business students with a preference for a master in accountancy will score high on honesty-humility.

Hypothesis 1a: Persons scoring high on honesty-humility will more likely prefer a master in accountancy.
Hypothesis 1b: Persons scoring high on agreeableness will more likely prefer a master in accountancy.
Hypothesis 1c: Persons scoring high on conscientiousness will more likely prefer a master in accountancy.
Hypothesis 1d: Persons scoring high on openness to experience will more likely prefer a master in accountancy.
Hypothesis 1e: Persons scoring high on emotionality will less likely prefer a master in accountancy.
Hypothesis 1f: Persons scoring high on extraversion will

The statutory auditor: the entrepreneur or the public service provider

less likely prefer a master in accountancy.

Statutory auditors and especially audit partners working in a commercial audit firm combine an important public task as an independent assurance provider with a role as an entrepreneur in a firm striving for positive results and growth by the end of the book year. These roles can be conflicting at sometimes. Examples can relate to insufficient planning of team members on audit engagements or a lack of involvement of senior staff in the engagement. Hossain et al. (2017) found that the number of senior auditors on the audit team has a positive association with audit quality. Other examples can relate to issues like materiality or waiving audit misstatements. Due to the lack of bright-line rules in professional standards and the focus on professional judgment, there is room for significant discretion in materiality assessments (Acito et al. 2009, 2019). Within the acceptable ranges of the materiality thresholds, an auditor has an incentive to increase the levels of materiality in the audit or to allow the auditor to accept initially identified audit misstatements. Nelson (2009) describes these and other pressures and incentives which hamper auditors' professional skepticism.

In order to avoid potential audit quality issues, an audit professional in a commercial audit firm must be able to resist commercial incentives for the benefit of the audit quality. A personal preference to either entrepreneurial or professional behaviour might influence a person's choice and may have audit quality implications. The next sections evaluate the literature on the effect of personality characteristics on a person's entrepreneurial or professional preferences.

### 2.2. Entrepreneurship

Weitzel et al. (2010) and Ben-Ner et al. (2004) found evidence of a relationship between personality and a person's entrepreneurial talent. Weitzel et al. (2010) distinguish between two elements of entrepreneurship: business talent and creativity. Business talent relates to a person's ability to engage in commercial market-oriented activities. Creativity is the ability to develop new business propositions and to be innovative. Weitzel et al. (2010) measured personality with the well-established Big Five factor model (Goldberg 1990). They found positive correlations between the personality factors 'extraversion' and 'openness to experience' with business creativity. Extraversion was also found to be a drive of business talent. Neuroticism, or emotionality, on the other hand, negatively influenced one's business talent. These findings show that personality influences (perceived) entrepreneurial talent.

Based on the findings of Weitzel et al. (2010) it is expected that the characteristics openness to experience and extraversion have a positive relation with the creative aspect of entrepreneurship. Extraversion and emotionality are expected to relate positive to the business aspect of entrepreneurship. It is interesting to replicate the findings of Weitzel et al. (2010) on the sample of students used in this study. In addition to the study of Weitzel et al. (2010), the extended HEXACO-personality model is applied in this study allowing to get an additional insight on the relationship between the honesty-humility personality characteristic and the aspects of entrepreneurship.

Zhao and Seibert (2006) used meta-analytical techniques to examine the relationship between personality and entrepreneurial status. They used personality variables used in previous studies and categorized they according to the five-factor model of personality (Costa and McCrae 1992). They found significant differences between entrepreneurs and managers on 4 personality dimensions such that entrepreneurs scored higher on conscientiousness and openness to experience and lower on neuroticism and agreeableness. Contrary to Weitzel at al. (2010) no difference was found for Extraversion, which could be due to the interfering effects of people who perceive themselves business talents or creative entrepreneurs.

Accordingly, in this study, the same relationships are predicted in the hypotheses. In this study entrepreneurship is measured as self-perceived entrepreneurship. This measure reflects a person's self-confidence as an entrepre-

neur and is a predictor of a student's future career choice. The measure does not measure the actual success as an entrepreneur. The section methods and data will give a further explanation of the measure applied.

Hypothesis 2a: Persons scoring high on extraversion and openness to experience consider themselves to be creative entrepreneurs.

Hypothesis 2b: Persons scoring high on extraversion but low on emotionality perceive themselves to be business talents.

### 2.3. Public service motivation

Statutory auditors provide independent assurance on, in most instances, financial information. As such they are important actors in economic systems in which adverse selection problems arise (Akerlof 1970). Although mostly working in a commercial environment, statutory auditors fulfil a public task. A question raised in this study is if the personality of a statutory auditor correlates to the personality of a person with a public service motivation.

From the 1950s (Van Riper 1952), scholars in the field of public administration investigated the attributes of a public service motivation (PSM), which explains why people prefer public service over a mostly better paid occupation in the private sector. Persons with high PSM find the satisfaction they receive from their contribution to society more important than their individual welfare. Early scholars reported six different dimensions for PSM, being:

- 1) attraction to policymaking (Kelman 1987);
- 2) commitment to the public interest (Downs 1967);
- 3) social justice (Frederickson 1971);
- 4) civic duty (Mosher 1968);
- 5) compassion (Frederickson and Hart 1985); and
- 6) self-sacrifice (Macy 1971).

Jang (2012) used the Big-Five factor personality scale to research the effect between these personality factors and public service motivation. Jang (2012) presented evidence for a positive relationship between personality factor 'extraversion' and the PSM dimension 'attraction to policy-making', but a negative association between the personality factor 'extraversion' and PSM dimension 'self-sacrifice'. This could indicate that extravert persons are attracted by the impact they can make personally, by engaging in policymaking. However, they seem to be less inclined to sacrifice their own individual benefit for the sake of their societal tasks. Furthermore Jang (2012) found that the personality factor 'agreeableness' was positively correlated to PSM dimension 'compassion'. 'Conscientiousness' was positively related to 'commitment to the public interest', 'compassion', and 'self-sacrifice'. 'Neuroticism' or 'emotionality' was negatively associated with 'commitment to the public interest' and 'compassion', but positively with the 'attraction to policy-making'. 'Openness to experience' was positively associated with all dimensions of PSM.

Van Witteloostuijn et al. (2017) found that affective motives of PSM – compassion and self-Sacrifice – are positively influenced by the personality traits honesty-humility, emotionality and agreeableness and negatively by conscientiousness. In contrast non-affective PSM motives-attraction to policy making and commitment to the public interest are positively associated with the openness to experience trait.

Based on the prior studies, I expect that the personality trait honesty-humility has a positive relation with a person's public service motivation.

Hypothesis 3: Persons scoring high on honesty-humility, openness to experience, agreeableness, emotionality but low on conscientiousness are more 'committed to the public interest'.

### 3. Data and method

### 3.1. Participants

The main aim of this study is to test the effect of personality on a person's study preference and their attraction to entrepreneurial behaviour or public service. A group of first year business students at Tilburg University was selected as participant in this study. This group consists of students yet undecided about their preferred master studies. This selection allows a test of the question whether personality drives study preference. Or to phrase it differently, whether a student with a preference for accountancy different from a student with a preference for a master in for example finance or marketing.

The aim of this study is to get a better understanding of fundamental personality traits as a driver for study preference. To reduce the effect of potentially confounding effects, such as training, education or working experience, a group of first year business students was selected to conduct this research.

A disadvantage of this sample is that the participants are students and not statutory auditors yet. Neither is it, at this preliminary phase of their business study, clear if they will eventually start their career at an audit firm. Elements such as independence or ethical behaviour might be more important for students who aspire a career as statutory auditor instead of a career as accountant in business (occupations such as: CFO, manager finance or financial controller). A replication of this study amongst a group of statutory auditors, amongst different ranks within the audit firm, is required to get more insights about the selection of personality within the audit firm. Given the fact that the study researches the relationships between fundamental human linkages (i.e., between core personality traits, a preference for accountancy and ESE's and PSM's underlying affective vis-à-vis nonaffective motives), it is however concluded that the pros outweigh the cons (Bello et al. 2009).

The study was conducted in September 2012 as a part of a compulsory introductory course on organization sciences during which students have been asked to participate in an online survey to collect information on sociodemographic, their study preferences and personality traits, using the LimeSurvey system. Three weeks later, these students were asked to participate in a pen-and-paper survey, which included questions related to public service motivation (PSM) and entrepreneurial self-efficacy (ESE). After excluding unmatched data and participants with missing data, the final sample used throughout the following analysis includes 265 individuals. The average age was 19 years (range 17–23 years), and 67 per cent are female.

### 3.2. Variables

### Personality

In this study, the 60-item HEXACO personality inventory was applied (Ashton and Lee 2009), reproduced in Appendix 2. This scale includes ten items for each of the following six personality traits: Honesty-Humility (Cronbach's alpha = 0.76); Emotionality (Cronbach's alpha = 0.81); Extraversion (Cronbach's alpha = 0.81); Agreeableness (versus anger) (Cronbach's alpha = 0.71); Conscientiousness (Cronbach's alpha = 0.82); and Openness to experience (Cronbach's alpha = 0.75). All items use a five-point Likert-type answer scale, with response categories varying from 1 ('strongly disagree') to 5 ('strongly agree'). For the regression analysis, the average score for each of the six personality traits identified was calculated.

### Entrepreneurial self-efficacy

To classify whether participants are entrepreneurially talented, I measure entrepreneurial self-efficacy (ESE). Studies focusing on entrepreneurial motivation, intentions, and behaviours typically include ESE as an explanatory variable. ESE is particularly important for predicting new venture intentions (Boyd and Vozikis 1994; Zhao et al. 2005; Barbosa 2007). Chen et al. (1998) and Zhao et al. (2005) measure ESE by referring to very specific tasks and skills that are needed to start up and run a business. Wilson et al. (2007) offer an alternative in which no direct references to start-ups or business operations are made. Urbig et al. (2012) applied this less specific measure in their study to capture ESE. Weitzel et al. (2010) have combined the more general scale of Wilson et al. (2007) with the more specific scale of Zhao et al. (2005) and added two additional items. In this study, the ESE scale used by Weitzel et al. (2010) is used (Table 1). On a 7-point scale from 'much worse' to 'much better', participants were asked to indicate their confidence in their abilities to perform different activities compared to their fellow students.

A common factor analysis is used to validate the model. The common factor analysis shows two factors with eigenvalues above 1. In accordance with Weitzel et al. (2010), two factors are observed that distinguish two different elements of entrepreneurship: business talent (BT) (Cronbach's alpha = 0.85)) and creativity (C) (Cronbach's alpha

Table 1. Scale of entrepreneurial self-efficacy (ESE).

Items	Source	Factor
How do you compare yourself to		
fellow students in your ability to		
successfully identify new business	Zhao et al. (2005)	BT
opportunities? (ESE1)		
create new products? (ESE2)	Zhao et al. (2005)	С
think creatively? (ESE3)	Wilson et al. (2007)	С
commercialize an idea or new	Zhao et al. (2005)	BT
development? (ESE4)		
raise funds for a new business?	Weitzel et al. (2010)	BT
(ESE5)		
sell a new product or service?	Weitzel et al. (2010)	BT
(ESE6)		
solve problems? (ESE7)	Wilson et al. (2007)	BT
manage money? (ESE8)	Wilson et al. (2007)	BT
be creative? (ESE9)	Wilson et al. (2007)	С
get people to agree with you?	Wilson et al. (2007)	BT
(ese10)		
be a leader? (ese11)	Wilson et al. (2007)	BT
make decisions? (ese12)	Wilson et al. (2007)	BT

= 0.85). Weitzel et al. (2010) noted differences between entrepreneurs with either a creative or a business talent orientation. In the remaining analysis of this study, both elements of entrepreneurial behaviour are considered.

#### Public service motivation

Public Service Motivation (PSM) was measured by adapting the scale proposed by Kim et al. (2010) in order to apply the items to the context of bachelor students. Kim's (2010) PSM scale (Table 2) has twelve items aimed to measure four factors: (1) attraction to policymaking (APM); (2) commitment to the public interest (CPI); (3) compassion (COM); and (4) self-sacrifice (SS). All items have a seven-point Likert-type answer scale, anchored from 1 ('I strongly disagree') to 7 ('I strongly agree').

### Control variables

Person-related control variables were included in this study in the form of a dummy variable for male versus female and age in years. These variables were included in accordance with prior studies which measure either entrepreneurial self-efficacy (ESE) (Weitzel et al. 2010) or public service motivation (PSM) (Esteve et al. 2016).

# 4. Findings

### 4.1. Descriptive statistics

Table 3 presents the summary statistics and bivariate correlations of our variables. The descriptive statistics indicate negative correlations between a preference for a master in accountancy and the openness experience of the students in the sample. The descriptive statistics also indicate a negative correlation between entrepreneurial self-esteem and preference for accountancy. Elements

**Table 2.** The four-dimension twelve-item PSM measure.

Item	Question	Factor
PSM1	I am interested in those public programs that are beneficial for my country.	Attraction to Policymaking (APM)
PSM2	Sharing my views on public policies with others is attractive to me.	Attraction to Policymaking (APM)
PSM3	Seeing people get benefits from a public program where I would have been deeply involved in would bring me a great deal of satisfaction	Attraction to Policymaking (APM)
PSM4	I consider public service my civic duty	Commitment to the public interest (CPI)
PSM5	Meaningful public service is very important to me.	Commitment to the public interest (CPI)
PSM6	I would prefer seeing public officials do what is best for the whole community.	Commitment to the public interest (CPI)
PSM7	It is difficult for me to contain my feelings when I see people in distress.	Compassion (COM)
PSM8	I am often reminded by daily event how dependent we are on another.	Compassion (COM)
PSM9	I feel sympathetic for the plight of the unprivileged.	Compassion (COM)
PSM10	Making a difference in society means more to me than personal achievements.	Self-sacrifice (SS)
PSM11	I am prepared to make enormous sacrifices for the good of the society.	Self-sacrifice (SS)
PSM12	I believe in putting duty before self.	Self-sacrifice (SS)

like relatively high job certainty for accountancy students after graduation or the perspective of a relatively well-structured job might explain why persons 'not open to new experiences' prefer a master in accountancy. Males are more extravert compared to women. There are significant correlations between personality characteristics, on the one hand, and a person's public service motivation and entrepreneurial self-efficacy, on the other hand. A public service motivation is positively associated with personality characteristics 'honesty-humility', 'emotionality', 'agreeableness', and 'openness to experience'. There are negative associations between 'honesty-humility', 'emotionality', and 'agreeableness' with entrepreneurial self-efficacy, and positive relationships between 'extraversion' and 'openness to experience'.

### 4.2. Empirical results

Hypothesis 1: Personality characteristics which drive a study preference for accountancy

Table 4 presents the results of the regression analyses on the first set of hypotheses (1a to 1f). Theses hypotheses are tested on HEAXCO-personality domain level (model

**Table 3.** Summary statistics and bivariate correlations.

1) as well as on underlying HEXACO-personality facets level (model 2).

The results of regression model 1 provide evidence that 'openness to experience' (OE) has a significant negative influence on the participant's choice for a master's in accountancy. As such hypothesis 1d is rejected, which expresses the expectation of a positive relationship. Job certainty, which is known to be high for business students with a master's in accountancy in the Netherlands, seems to be a significant driver for a choice in accountancy. The findings of this study are inconsistent with the hypothesis and the results of Farag and Elias (2016) which found that accountancy students score relatively high on the personality characteristic openness to experience. The findings of this study are however consistent with the results of a more recent study of Kerckhofs et al. (2021) showing that personality trait openness to experience is negatively associated to a preference for a master in accountancy.

There are no significant results on any of the other HEXACO personality domains, as such there is no significant evidence for hypotheses 1a, 1b, 1c, 1e and 1f. The positive or negative signs of the variables in model 1 suggest that students scoring higher on honesty-humility and conscientiousness will more likely prefer a

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Preference for	0.38	0.48	1	•		'	'	'		•			'	'	
accountancy															
2. Male	0.33	0.47	0.06	1											
3. Age	18.74	1.02	0.02	-0.08	1										
4. Honesty-humility	3.15	0.59	0.08	0.26**	0.14*	1									
<ol><li>Emotionality</li></ol>	2.84	0.63	0.02	0.51***	-0.20**	0.02	1								
<ol><li>Extraversion</li></ol>	3.55	0.55	-0.08	-0.12*	0.12*	-0.11+	-0.26***	1							
<ol><li>Agreeableness</li></ol>	3.07	0.51	-0.03	-0.07	0.08	0.22**	-0.09	-0.11	1						
8. Conscientiousness	3.43	0.61	0.09	0.20**	0.00	0.25***	0.14*	-0.02	0.06	1					
9. Openness to	2.75	0.62	-0.22**	-0.03	0.13*	0.12*	0.02	0.03	0.01	-0.03	1				
experience															
10. PSM	4.03	0.69	-0.01	-0.07	0.17**	0.15*	0.13*	0.00	0.15*	0.04	0.31***	1			
<ol><li>Entrepreneurial</li></ol>	4.55	0.66	-0.13*	-0.16*	0.13*	-0.24***	-0.19**	0.49***	-0.27***	0.05	0.16*	0.00	1		
self-esteem all															
12. Entrepreneurial	4.74	0.72	-0.09	-0.19**	0.09	-0.29***	-0.24***	0.50***	-0.27***	0.06	0.03	-0.04	0.94***	1	
self-esteem bus															
13. Entrepreneurial	3.93	1.05	-0.14	-0.00	0.15*	0.01	0.04	0.21***	-0.11+	0.02	0.36***	0.09	0.59***	0.27***	1
self-esteem create															

<sup>+</sup> p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001.

**Table 4.** Outcomes of the empirical test of hypothesis 1.

	_				
Preference for	M	odel 1	Model 2		
accountancy	0.15	(* 0 = )		(0.40)	
Constant	0.46	(2.97)	-0.02	(3.49)	
Male	0.15	(0.34)	0.20	(0.38)	
Age	0.12	(0.13)	0.22	(0.15)	
Honesty-humility	0.33	(0.26)			
Emotionality	-0.06	(0.26)			
Extraversion	-0.36	(0.25)			
Agreeableness	-0.31	(0.27)			
Conscientiousness	0.18	(0.23)			
Openness to experience	-0.91	(0.24)***			
Honesty-humility					
Sincerity			0.44	(0.23)*	
=> fairness			-0.07	(0.20)	
=> greed avoidance			-0.07	(0.25)	
=> modesty			-0.22	(0.21)	
Emotionality					
=> fearfulness			0.04	(0.27)	
=> anxiety			-0.35	(0.22)	
=> dependence			0.13	(0.20)	
=> sentimentality			0.31	(0.24)	
Extraversion					
=> social self-esteem			0.51	(0.32)	
=> social boldness			0.24	(0.27)	
=> sociability			-0.87	(0.27)***	
=> liveliness			-0.66	(0.31)*	
Agreeableness					
=> forgivingness			0.46	(0.20)**	
=> gentleness			-0.21	(0.26)	
=> flexibility			-0.12	(0.24)	
=> patience			-0.31	(0.22)	
Conscientiousness					
=> organization			0.23	(0.23)	
=> diligence			0.47	(0.27)+	
=> perfectionism			-0.30	(0.25)	
=> prudence			0.03	(0.28)	
Openness to experience				` /	
=> aesthetic appreciation			-0.18	(0.20)	
=> inquisitiveness			-0.20	(0.19)	
=> creativity			-0.10	(0.19)	
=> unconventionality			-0.49	(0.27)+	
Observations	263		263	` /	
R-square	0.06		0.15		

<sup>+</sup> p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001.

career in accountancy. Extraversion and agreeableness show negative signs indicating that people with those personality characteristics will less likely move towards a career in accountancy. However due to the lack of significance for these hypotheses no conclusions can be drawn for these variables.

Model 2 presents the results of the regression analysis on the level of the personality facets underlying the six personality domains of the HEXACO model. The results show that sincere people (a facet of the personality characteristic honesty-humility) will be more attracted to a master in accountancy. This result might be beneficial for reliable financial information, as sincere accountants and auditors might be more inclined to provide sincere financial information.

Sociability and liveliness (facets of 'extraversion') have a negative significant relationship with a choice for accountancy, which indicates that accountancy students focus on numbers, rather than on people. Forgivingness (a facet of personality characteristic Agreeableness) and diligence (a facet of personality characteristic Conscientiousness) have a positive significant influence, which might be a somewhat surprising outcome for an accountant. In contrary to the personality characteristic Openness to experience, the other five personality characteristics of the HEXACO-model show mixed results on the underlying personality facets level. As the hypotheses of this study have been formulated on the level of the HEXACO-personality domain level these findings provide more granular insights on the personality characteristics of persons with a preference for a master's in accountancy, however, do not provide clear evidence to support the hypotheses.

Hypothesis 2: The effect of personality on perceived entrepreneurial talent

The second hypothesis expresses the expectation that personality is a determinant of one's entrepreneurial self-efficacy (ESE). Table 5 provides supporting evidence that personality characteristics indeed drive a person's entrepreneurial self-efficacy. This study shows positive significant relations between the personality characteristics extraversion, conscientiousness and openness to experience related to the combined measure of entrepreneurial self-efficacy as the dependent variable. Honesty-humility and agreeableness related negatively to total measure of entrepreneurial self-efficacy.

**Table 5.** The effect of personality characteristics on self-perceived entrepreneurial talent.

	ESE	(total)	ESE busin	ess talent	ESE creativity		
	Coef.		Coef.		Coef.		
Constant	2.47	(0.75)***	3.57***	(0.80)***	-1.20	(1.33)	
Male	-0.07	(0.09)	-0.08	(0.09)	-0.04	(0.15)	
Age	0.06	(0.03)+	0.04	(0.04)	0.12	(0.11)	
Honesty-humility	-0.24	(0.06)***	-0.29***	(0.07)***	-0.05	(0.11)	
Emotionality	-0.08	(0.06)	-0.16**	(0.07)**	0.19	(0.11)	
Extraversion	0.50	(0.06)***	0.53***	(0.07)***	0.39	(0.11)***	
Agreeableness	-0.27	(0.07)***	-0.29***	(0.07)***	-0.19	(0.12)	
Conscientiousness	0.17	(0.06)***	0.20***	(0.06)***	0.06	(0.10)	
Openness to experience	0.18	(0.05)***	0.06	0.06	0.58***	(0.10)***	
R-Square	0.38	(19.51)***	0.39	(20.23)***	0.20	(7.88)***	
Observations	263	263	263	263	263	263	

<sup>+</sup> p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001.

These findings are in line with the results of prior studies of Weitzel et al. (2010) which provide evidence for a positive impact of the personality characteristics extraversion on a person's self-perceived entrepreneurial talent. The finding that persons open to new experiences are more attracted to entrepreneurial behaviour aligns with the intuition as entrepreneurship incorporates more risk and uncertainty compared to employed labour. Honest or humble persons consider themselves to be less talented entrepreneurs. Greed avoidance and modesty, facets of the personality characteristic honesty-humility, intuitively match with especially the business aspect of entrepreneurship.

The analysis on the level of the two separate elements of entrepreneurial self-efficacy, being business talent and creativity, confirms this expectation. Persons attracted to the business aspect of entrepreneurship score low on 'honesty-humility', whilst persons attracted to the creativity part of entrepreneurship are more open to new experiences. 'Extraversion' is in both cases a trait that is positively associated with both entrepreneurial aspects. The personality characteristic emotionality seems to be an important determinant for either a tendency towards the business or the creative aspect of entrepreneurship as the directions of the relationship in the regression contradict. People scoring low on emotionality consider themselves significantly more talented on the business aspect of entrepreneurship. Although the relation is not significant, the study shows a contradicting effect on the creative aspect.

The findings in this study provide evidence for the expectations expressed in hypotheses. Persons scoring high on extraversion and openness to experience consider themselves to be creative entrepreneurs (hypothesis 2a). Persons scoring high on extraversion but low on emotionality perceive themselves to be business talents (hypothesis 2b).

Hypothesis 3: The effect of personality on public service motivation

The results presented in this study provide evidence that a person's personality characteristics are determinants of self-perceived entrepreneurial talent and his or her preference for a master in accountancy. Hypothesis 3 raises the question if personality also determines a person's willingness to fulfil a public task (public service motivation). Table 6 presents the results and reflects that personality characteristics are significant determinants of a person's public service motivation (PSM).

Using the total combined Public Service Motivation (PSM) as the dependent variable, Table 6 shows that women are more motivated to fulfil a public function compared to men. These findings are in line with the results of Esteve et al. (2016). About the personality characteristics the results provide evidence that personality characteristics 'honesty-humility', 'emotionality', 'agreeableness' and 'openness to experience' have a significant positive influence on a person's public service motivation. These findings are in our accordance with the expectations expressed in our hypothesis 3.

**Table 6.** The effect of personality on a person's Public Service Motivation.

	PSM	
Constant	-0.42	(0.88)
Male	-0.31	(0.10)***
Age	0.09	(0.04)*
Honesty-humility	0.17	(0.08)*
Emotionality	0.30	(0.08)***
Extraversion	0.06	(0.08)
Agreeableness	0.16	(0.08)*
Conscientiousness	0.01	(0.07)
Openness to experience	0.28	(0.06)***
R-Square	0.18	(7.04)
Observations	263	263

<sup>+</sup> p < 0.10; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001.

### 5. Conclusions and discussion

The results of this study indicate that business students with a preference for a master in accountancy, are not the ones with a personality type which attracts them to new experiences (openness to experience). As, Farag and Elias (2016) found evidence that openness to experience is positively associated with professional skepticism, the findings of this study would imply that future auditors lack the personality characteristics which drive desired professional skeptical behaviour. However, on positive note, the results show that the business students attracted to accountancy are more sincere and diligent compared to business students with other preferences. These findings are relevant for the audit practice as it emphasizes the importance of training by universities and audit firms to stimulate professional skeptical behaviour, to avoid potential audit quality problems.

The results of this study furthermore confirm the findings of earlier studies that personality is an important driver of a person's entrepreneurial (self-perceived) talent and a person's public service motivation. However, personality characteristics of accountancy students do not match with the characteristics of entrepreneurs or persons motivated to fulfil a public task. 'Openness to experience', a personality characteristic which the group of accountancy students clearly lack, is for example an important characteristic of entrepreneurs and persons motivated to work in de public domain.

Future research could lead to a better understanding of the effects of these findings on the (intended) behaviour of auditors. For example, will sincere accountants behave more ethically when it comes to professional judgement areas in their work? Furthermore, it is interesting to see if public service motivation and/or entrepreneurial self-efficacy have an impact on (ethical) behaviour. If so, these factors could have implications for the HR policies of audit firms. An adequate and diverse mix of personalities is important to find a balance between entrepreneurial behaviour (to be successful in business or to engage in creative activities which drive innovation in the business) and a commitment to the important public task of the accountant.

The findings can also have practical implications for the design of (university) education and training of accountants and auditors. First, awareness of the personality characteristics of students helps to understand how to communicate with these students. The introvert accountancy students for example, might not express themselves in groups as clearly as more extravert students in group discussions. Second, it is important to understand which type of persons are attracted to the master (in accountancy) and to understand if the mix of personality still matches the needs of future employers. The findings of this study show that (the personality characteristics of) the group of students with a preference for accountancy, by nature, differs from the ones with a preference towards entrepreneurial behaviour or a public service motivation. This implies that education and training aimed to stimulate or nurture entrepreneurial capabilities could be beneficial for accountants.

This study has some limitations. First, the survey conducted in this study involves a group of students and not a group of statutory auditors. These students were asked about their study preference for a master in accountancy, because decisions on future occupations were still too far ahead of them. Not all these students will eventually start a career in an audit firm. It would be interesting to perform this study among a group of statutory auditors to find if results are any different. Furthermore, it would be interesting to see if personality characteristics, entrepreneurial talent, and public service motivation (PSM) differ amongst the different ranks in the audit firms (for example, audit partners versus audit staff). This would be interesting to understand which personality characteristics drive career success within the audit firm and if the mix of personality characteristics within the firm become more or less diverse.

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### References

- Acito AA, Burks JJ, Johnson WB (2009) Materiality decisions and the correction of accounting errors. The Accounting Review 84: 659–688. https://doi.org/10.2308/accr.2009.84.3.659
- Acito AA, Burks JJ, Johnson WB (2019) The materiality of accounting errors: Evidence from SEC comment letters. Contemporary Accounting Research 36: 839–868. https://doi.org/10.1111/1911-3846.12458
- Akerlof GA (1970) The Market for "Lemons": Quality Uncertainty and the Market Mechanism. Quarterly Journal of Economics 84: 488–500. https://doi.org/10.1016/B978-0-12-214850-7.50022-X
- Ashton MC, Lee KM, Szarota P, De Vries RE, Di Blas L, De Raad B (2004) A six-factor structure of personality-descriptive adjectives: Solutions from psycholexical studies in seven languages. Journal of Personality and Social Psychology 86: 356–366. https://doi.org/10.1037/0022-3514.86.2.356
- Ashton MC, Lee K (2007) Empirical, theoretical, and practical advantages of the HEXACO-model of personality structure. Personality and Social Psychology Review 11: 150–166. https://doi. org/10.1177/1088868306294907
- Ashton MC, Lee K (2009) The HEXACO-60: A short measure of the major dimensions of personality. Journal of Personality Assessment 91: 340–345. https://doi.org/10.1080/00223890902935878
- Bailey CD (2017) Psychopathy and accounting students' attitudes towards unethical professional practices. Journal of Accounting Education 41: 15–32. https://doi.org/10.1016/j.jaccedu.2017.09.004
- Barrett M, Gendron Y (2006) WebTrust and the "commercialistic auditor": The unrealized vision of developing auditor trustworthiness in cyberspace. Accounting, Auditing & Accountability Journal 19(5): 631–662. https://doi.org/10.1108/09513570610689640
- Ben-Ner A, Putterman L, Kong F, Magan D (2004) Reciprocity in a two-part dictator game. Journal of Economic Behavior & Organization 53: 333–352. https://doi.org/10.1016/j.jebo.2002.12.001

- Boyd NG, Vozikis GS (1994) The influence of self-efficacy on the development of entrepreneurial intentions and actions. Entrepreneurship Theory and Practice 18: 63–77. https://doi. org/10.1177/104225879401800404
- Barbosa SD, Kickul J, Liao-Troth M (2007) Development and validation of a multidimensional scale of entrepreneurial risk perception. Academy of Management Proceedings 2007: 1–6. https://doi.org/10.5465/ambpp.2007.26508257
- Bello D, Leung K, Radebaugh L, Tung RL, Van Witteloostuijn A (2009) From the editors: Student samples in international business research. Journal of International Business Studies 40: 361–364. https://doi.org/10.1057/jibs.2008.101
- Carnegie GD, Christopher JN (2010) Traditional accountants and business professionals: Portraying the accounting profession after Enron. Accounting, Organizations and Society 35(3): 360–376. https://doi.org/10.1016/j.aos.2009.09.002
- Chen CC, Greene PG, Crick A (1998) Does entrepreneurial self-efficacy distinguish entrepreneurs from managers? Journal of business venturing 13(2): 95–316. https://doi.org/10.1016/S0883-9026(97)00029-3
- Cleckley H (1941) The mask of sanity; an attempt to reinterpret the so-called psychopathic personality. Mosby, Oxford, England.
- Cleckley H (1976) The mask of sanity (5<sup>th</sup> ed.). CV Mosby St. Louis, MO.
- Contessotto C, Knechel WR, Moroney RA (2019) The association between audit manager and auditor-in-charge experience, effort, and risk responsiveness. Auditing: A Journal of Practice & Theory 38: 121–147. https://doi.org/10.2308/ajpt-52308
- Costa Jr PT, McCrae RR (1992) Four ways five factors are basic.
   Personality and Individual Differences 13(6): 653–665. https://doi. org/10.1016/0191-8869(92)90236-I

- Dirsmith M, Covaleski MA, Samuel S (2015) On being professional in the 21<sup>st</sup> century: An empirically informed essay. Auditing: A Journal of Practice & Theory 34(2): 167–200. https://doi.org/10.2308/ajpt-50698
- Donellan MB, Oswald FL, Lucas RE (2006) The mini-IPIP scales: Tiny-yet-effective measures of the Big Five factors of personality. Psychological Assessment 18(2): 192–203. https://doi.org/10.1037/1040-3590.18.2.192
- Downs A, Rand Corporation (1967) Inside bureaucracy. Little, Brown and Company, Boston, 292 pp. https://doi.org/10.7249/CB156
- Dutton K (2012) The wisdom of psychopaths, Random House. https://doi.org/10.1038/scientificamerican1012-76
- Esteve M, Van Witteloostuijn A, Boyne G (2015) The effects of public service motivation on collaborative behavior: Evidence from three experimental games. International Public Management Journal 18: 171–189. https://doi.org/10.1080/10967494.2015.1012573
- Esteve M, Urbig U, Van Witteloostuijn A, Boyne G (2016) Prosocial behavior and public service motivation. Public Administration Review 76: 177–187. https://doi.org/10.1111/puar.12480
- Farag MS, Elias RZ (2016) The relationship between accounting students' personality, professional scepticism and anticipatory socialization. Accounting Education 25: 124–138. https://doi.org/10.1080/09639284.2015.1118639
- Frederickson HG (1971) New Public Administration.
- Frederickson HG, Hart DK (1985) The public service and the patriotism of benevolence. Public Administration Review: 547–553. https://doi.org/10.2307/3109929
- Gendron Y (2002) On the role of the organization in auditors' client-acceptance decisions. Accounting, Organizations and Society 27(7): 659–684. https://doi.org/10.1016/S0361-3682(02)00017-X
- Glenn A, Yang Y, Raine A, Colletti P (2010) No Volumetric differences in the anterior cingulate of psychopathic individuals. Psychiatry Research: Neuroimaging 183: 140–143. https://doi.org/10.1016/j.pscychresns.2010.05.009
- Goldberg LR (1990) An alternative 'Description of personality': The Big-Five factor structure. Journal of Personality and Social Psychology 59: 1216–1229. https://doi.org/10.1037/0022-3514.59.6.1216
- Granleese J, Barrett TF (1990) The social and personality characteristics of the Irish Chartered Accountant. Personality and Individual Differences 11: 957–964. https://doi.org/10.1016/0191-8869(90)90278-Y
- Gul FA, Wu D, Yang Z (2013) Do individual auditors affect audit quality? Evidence from archival data. The Accounting Review 88: 1993–2023. https://doi.org/10.2308/accr-50536
- Hanlon G (1996) "Casino capitalism" and the rise of the "commercialized" service class-an examination of the accountant. Critical Perspectives on Accounting 7(3): 339–363. https://doi.org/10.1006/cpac.1996.0038
- He X, Kothari SP, Xiao T, Zuo L (2018) Long-term impact of economic conditions on auditors' judgment. The Accounting Review 93: 203–229. https://doi.org/10.2308/accr-52009
- Hossain S, Yazawa K, Monroe GS (2017) The relationship between audit team composition, audit fees, and quality. Auditing: A Journal of Practice & Theory 36: 115–135. https://doi.org/10.2308/ajpt-51682
- Hurtt RK (2010) Development of a scale to measure professional skepticism. Auditing: A Journal of Practice & Theory 29(1): 149– 171. https://doi.org/10.2308/aud.2010.29.1.149
- Jang CL (2012) The effect of personality traits on public service motivation: evidence from Taiwan. Social Behavior and Personality:

- an International Journal 40: 725–733. https://doi.org/10.2224/sbp.2012.40.5.725
- John OP, Srivastava S (1999) The Big Five trait taxonomy: History, measurement, and theoretical perspectives. Handbook of personality: Theory and Research 2: 102–138.
- Johnson MD, Morgeson FP, Hekman DR (2012) Cognitive and affective identification: Exploring the links between different forms of social identification and personality with work attitudes and behavior. Journal of Organizational Behavior 33: 1142–1167. https://doi.org/10.1002/job.1787
- Johnson MK, Wade RC, Petrini L (2011) A new trait on the market: Honesty-Humility as a unique predictor of job performance ratings Personality and Individual Differences 50: 857–862. https://doi. org/10.1016/j.paid.2011.01.011
- Kelman S (1987) Making public policy: A hopeful view of American government. Basic Books, New York.
- Kerckhofs L, Hardies K, Vandenhaute M, Ceustermans S (2021) Starting Your Career at an Accounting Firm: The Role of Personality in Explaining Career Starts. Accounting Horizons 35(1): 105–131. https://doi.org/10.2308/HORIZONS-2020-001
- Kim S, Vandenabeele W (2010) A strategy for building public service motivation research internationally. Public Administration Review 70: 701–709. https://doi.org/10.1111/j.1540-6210.2010.02198.x
- Knechel RW, Vanstraelen A, Zerni M (2015) Does the identity of engagement partners matter? An analysis of audit partner reporting decisions. Contemporary Accounting Research 32: 1443–1478. https://doi.org/10.1111/1911-3846.12113
- Lee K, Ashton MC, Morrison DL, Cordery J, Dunlop PD (2008) Predicting integrity with the HEXACO personality model: Use of self-and observer reports. Journal of Occupational and Organizational Psychology 81: 147–167. https://doi.org/10.1348/096317907X195175
- Lee K, Ashton MC (2008) The HEXACO personality factors in the indigenous personality lexicons of English and 11 other languages. Journal of Personality 76: 1001–1054. https://doi.org/10.1111/j.1467-6494.2008.00512.x
- Lennox CS, Wu X, Zhang T (2014) Does mandatory rotation of audit partners improve audit quality? The Accounting Review 89: 1775–1803. https://doi.org/10.2308/accr-50800
- Li WD, Fay D, Frese M, Harms PD, Gao XY (2014) Reciprocal relationship between proactive personality and work characteristics: a latent change score approach. Journal of Applied Psychology 99: 948–965. https://doi.org/10.1037/a0036169
- Macy JW (1971) Public service: The human side of government.
   HarperCollins Publishers.
- Malsch B, Gendron Y (2013) Re-theorizing change: Institutional experimentation and the struggle for domination in the field of public accounting. Journal of Management Studies 50(5): 870–899. https://doi.org/10.1111/joms.12006
- March C, Ziegelmeyer A, Greiner B, Cyranek R (2014) Monetary Incentives in Large Scale Experiments: A Case Study of Risk Aversion. Working paper, Technical University Munich.
- Mosher FC (1968) Democracy and the public service 53 (New York)
- Naff KC, Crum J (1999) Working for America does public service motivation make a difference? Review of Public Personnel Administration 19: 5–16. https://doi.org/10.1177/0734371X9901900402
- Noël NM, Michaels C, Levas MG (2003) The relationship of personality traits and self-monitoring behavior to choice of business

- major. Journal of Education for Business 78: 153–157. https://doi.org/10.1080/08832320309599713
- Perry JL, Wise LR (1990) The motivational bases of public service. Public Administration Review: 367–373. https://doi.org/10.2307/976618
- Urbig D, Weitzel U, Rosenkranz S, Van Witteloostuijn A (2012) Exploiting opportunities at all cost? Entrepreneurial intent and externalities. Journal of Economic Psychology 33: 379–393. https://doi.org/10.1016/j.joep.2011.03.003
- Van Riper PP (1952) Handbook of practical politics. New York City, Henry Holt and company. National Municipal Review 41(7): 375– 375. https://doi.org/10.1002/ncr.4110410714
- Van Witteloostuijn A, Esteve M, Boyne G (2017) Public sector motivation ad fonts: Personality traits as antecedents of the motivation to serve the public interest. Journal of Public Administration Research and Theory 27: 20–35. https://doi.org/10.1093/jopart/muw027
- Weitzel U, Urbig D, Desai S, Sanders M, Acs Z (2010) The good, the bad, and the talented: Entrepreneurial talent and selfish behavior. Journal of Economic Behavior & Organization 76: 64–81. https://doi.org/10.1016/j.jebo.2010.02.013
- Wilson F, Kickul J, Martino D (2007) Gender, entrepreneurial self-efficacy, and entrepreneurial career intentions: Implications for entrepreneurship education. Entrepreneurship: Theory & Practice 31: 387–406. https://doi.org/10.1111/j.1540-6520.2007.00179.x

- Wyatt AR (2004) Accounting professionalism—They just don't get it! Accounting Horizons 18 (1): 45–53. https://doi.org/10.2308/ acch.2004.18.1.45
- Zhao H, Seibert SE, Hills GE (2005) The mediating role of self-efficacy in the development of entrepreneurial intentions. Journal of Applied Psychology 90: 1265–1272. https://doi.org/10.1037/0021-9010.90.6.1265
- Zhao H, Seibert SE (2006) The big five personality dimensions and entrepreneurial status: a meta-analytical review. Journal of Applied Psychology 91(2): 259–271. https://doi.org/10.1037/0021-9010.91.2.259
- Zhao H, Seibert SE, Lumpkin GT (2010) The relationship of personality to entrepreneurial intentions and performance: A meta-analytic review. Journal of Management 36: 381–404. https://doi.org/10.1177/0149206309335187
- Zhou W, Guan Y, Xin L, Mak MCK, Deng Y (2016) Career success criteria and locus of control as indicators of adaptive readiness in the career adaptation model. Journal of Vocational Behavior 94: 124–130. https://doi.org/10.1016/j.jvb.2016.02.015
- Zimmerman RD (2008) Understanding the Impact of Personality Traits on Individuals' Turnover Decisions: A Meta-Analytic Path Model. Personnel Psychology 61(2): 309–348. https://doi.org/10.1111/j.1744-6570.2008.00115.x

# **Appendix 1**

### HEXACO-model, personality domains, and facets

Honesty-Humility: Persons with very high scores on the honesty-humility scale avoid manipulating others for personal gain, feel little temptation to break rules, are uninterested in lavish wealth and luxuries, and feel no special entitlement to elevated social status. Conversely, persons with very low scores on this scale will flatter others to get what they want, are inclined to break rules for personal profit, are motivated by material gain, and feel a strong sense of self-importance. The honesty-humility scale consists of four domains: sincerity, fairness, greed avoidance, and modesty.

**Emotionality:** Persons with very high scores on the emotionality scale experience fear of physical dangers, experience anxiety in response to life's stresses, feel a need for emotional support from others, and feel empathy and sentimental attachments with others. Conversely, persons with very low scores on this scale are not deterred by the prospect of physical harm, feel little worry even in stressful situations, have little need to share their concerns with others, and feel emotionally detached from others. The personality domain emotionality consists of the personality facets: fearfulness, anxiety, dependence, and sentimentality.

**Extraversion:** Persons with very high scores on the extraversion scale feel positively about themselves, feel confident when leading or addressing groups of people, enjoy social gatherings and interactions, and experience positive feelings of enthusiasm and energy. Conversely, persons with very low scores on this scale consider themselves unpopular, feel awkward when they are the center

of social attention, are indifferent to social activities, and feel less lively and optimistic than others do. The personality domain extraversion consists of the personality facets: social self-esteem, social boldness, sociability, and liveliness.

Agreeableness (versus anger): Persons with very high scores on the agreeableness scale forgive the wrongs that they suffered, are lenient in judging others, are willing to compromise and cooperate with others, and can easily control their temper. Conversely, persons with very low scores on this scale hold grudges against those who have harmed them, are rather critical of others' shortcomings, are stubborn in defending their point of view, and feel anger readily in response to mistreatment. The personality domain agreeableness consists of the personality facets: forgivingness, gentleness, flexibility, and patience.

Conscientiousness: Persons with very high scores on the conscientiousness scale organize their time and their physical surroundings, work in a disciplined way toward their goals, strive for accuracy and perfection in their tasks, and deliberate carefully when making decisions. Conversely, persons with very low scores on this scale tend to be unconcerned with orderly surroundings or schedules, avoid difficult tasks or challenging goals, are satisfied with work that contains some errors, and make decisions on impulse or with little reflection. The personality domain conscientiousness consists of the personality facets: organization, diligence, perfectionism, and prudence.

**Openness to Experience:** Persons with very high scores on the openness to experience scale become absorbed in the beauty of art and nature, are inquisitive

about various domains of knowledge, use their imagination freely in everyday life, and take an interest in unusual ideas or people. Conversely, persons with very low scores on this scale are rather unimpressed by most works of art, feel little intellectual curiosity, avoid cre-

ative pursuits, and feel little attraction toward ideas that may seem radical or unconventional. The personality domain openness to experience consists of the personality facets: aesthetic appreciation, inquisitiveness, creativity, and unconventionality.

# **Appendix 2**

### The 60-item HEXACO personality inventory

Measurement of the HEXACO construct (on a Likert scale, ranging from 1 to 5, 1 being "I strongly disagree" and 5 "I strongly agree"):

### **Honesty-Humility**

- 6. I wouldn't use flattery to get a raise or promotion at work, even if I thought it would succeed.
- 30(R). If I want something from someone, I will laugh at that person's worst jokes.
- 54. I wouldn't pretend to like someone just to get that person to do favors for me.
- 12(R). If I knew that I could never get caught, I would be willing to steal a million dollars.
- 36. I would never accept a bribe, even if it were very large.
- 60(R). I'd be tempted to use counterfeit money, if I were sure I could get away with it.
- 18. Having a lot of money is not especially important to me
- 42(R). I would get a lot of pleasure from owning expensive luxury goods.
- 24(R). I think that I am entitled to more respect than the average person is.
- 48(R). I want people to know that I am an important person of high status.

### **Emotionality**

- 5. I would feel afraid if I had to travel in bad weather conditions.
- 29. When it comes to physical danger, I am very fearful.
- 53(R). Even in an emergency I wouldn't feel like panicking.
- 11. I sometimes can't help worrying about little things.
- 35(R). I worry a lot less than most people do.
- 17. When I suffer from a painful experience, I need someone to make me feel comfortable.
- 41(R). I can handle difficult situations without needing emotional support from anyone else.
- 23. I feel like crying when I see other people crying.
- 47. I feel strong emotions when someone close to me is going away for a long time.
- 59(R). I remain unemotional even in situations where most people get very sentimental.

### **Extraversion**

- 4. I feel reasonably satisfied with myself overall.
- 28(R). I feel that I am an unpopular person.
- 52(R). I sometimes feel that I am a worthless person.
- 10(R). I rarely express my opinions in group meetings.
- 34. In social situations, I'm usually the one who makes the first move.
- 58. When I'm in a group of people, I'm often the one who speaks on behalf of the group.
- 16. I prefer jobs that involve active social interaction to those that involve working alone.
- 40. The first thing that I always do in a new place is to make friends.
- 22. On most days, I feel cheerful and optimistic.
- 46(R). Most people are more upbeat and dynamic than I generally am.

### Agreeableness

- 3. I rarely hold a grudge, even against people who have badly wronged me.
- 27. My attitude toward people who have treated me badly is "forgive and forget."
- 9(R). People sometimes tell me that I am too critical of others.
- 33. I tend to be lenient in judging other people.
- 51. Even when people make a lot of mistakes, I rarely say anything negative.
- 15(R). People sometimes tell me that I'm too stubborn.
- 39. I am usually quite flexible in my opinions when people disagree with me.
- 57(R). When people tell me that I'm wrong, my first reaction is to argue with them.
- 21(R). People think of me as someone who has a quick temper.
- 45. Most people tend to get angry more quickly than I do.

#### Conscientiousness

- 2. I plan ahead and organize things, to avoid scrambling at the last minute.
- 26(R). When working, I sometimes have difficulties due to being disorganized.
- 8. I often push myself very hard when trying to achieve a goal.
- 32(R). I do only the minimum amount of work needed to get by.

- 14(R). When working on something, I don't pay much attention to small details.
- 38. I always try to be accurate in my work, even at the expense of time.
- 50. People often call me a perfectionist.
- 20(R). I make decisions based on the feeling of the moment rather than on careful thought.
- 44(R). I make a lot of mistakes because I don't think before I act.
- 56(R). I prefer to do whatever comes to mind, rather than stick to a plan

### **Openness to Experience**

 I would be quite bored by a visit to an art gallery.

- 25. If I had the opportunity, I would like to attend a classical music concert.
- 7. I'm interested in learning about the history and politics of other countries.
- 31(R). I've never really enjoyed looking through an encyclopedia.
- 13. I would enjoy creating a work of art, such as a novel, a song, or a painting.
- 37. People have often told me that I have a good imagination.
- 49(R). I don't think of myself as the artistic or creative type.
- 19(R). I think that paying attention to radical ideas is a waste of time.
- 43. I like people who have unconventional views.
- 55(R). I find it boring to discuss philosophy.