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Personality and wealth

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Abstract
To what extent do personality traits predict wealth in adulthood over and above standard demographic factors? In all 3240 adults in the UK completed a Big Five personality test and reported on their property wealth, savings and investments, and their physical valuable items. We also had data on their age, education, household income and gender. Correlations and regressions showed that the demographics, particularly age and income were, as expected clearest correlates of wealth. Conscientious was positively and agreeableness, neuroticism and extraversion were negatively associated with savings and investments. The data pointed clearly to conscientiousness as the most important personality trait in wealth accumulation. Implications of these results as well as limitations of the study are discussed.

KEYWORDS
conscientiousness, investments, personality, savings, wealth

JEL CLASSIFICATION
G51, G41

1 | INTRODUCTION

In this study we were interested in the extent to which personality traits were related to a person’s wealth as measured by three factors (property, savings and investments, and valuable physical items) over and above the well-established demographic factors, particularly age, income and education which primarily determine wealth accumulation. It is a topic that has been gaining more and more attention (Exley et al., 2022) as the role of psychological factors has been explored in wealth accumulation.

There has been a long interest in the general psychology of money (Belsky & Gilovich, 1999; Bodnar, 1993; Furnham, 2014; Lea & Webley, 2006). There is also an interest in the measurement of money attitudes and beliefs (Furnham, 2019; Furnham & Cheng, 2019) as well as the role of wealth being (Netemeyer et al., 2018). In this study we focus on the direct association of personality with wealth, though others have sought to explore how personality influences factors that may impact wealth, such as money attitudes, financial decision making and spending (Fenton-O’Creevy & Furnham, 2019, 2020a, 2020b; Von Stumm et al., 2013) and income (Nyhus & Pons, 2005).

Personality concerns stable individual differences in patterns of behavior and response to stimuli. There is ample evidence for the influence of personality variables on decision-making and economic outcomes (e.g. Bensi et al., 2010). In recent decades there has been increasing agreement among personality psychologists on a five-factor model of personality (John, 2021). This ‘Big Five’ model has five personality factors: neuroticism/emotional stability, conscientiousness, agreeableness, extraversion, and openness. This model does not imply that personality can be reduced to only five traits, but rather that these five...
factors represent personality at a broad degree of abstraction: each factor can be further subdivided into multiple "facets". A wide range of studies have found personality effects on financial performance and financial wellbeing.

Over the last 20 years researchers have explored a variety of datasets to try to understand the role of psychological factors, especially personality in money management and wealth accumulation. Using data from longitudinal studies in Europe and America several studies have examined personality traits and a range of monetary variables. Results are mixed and sometimes contradictory.

1.1 Neuroticism

Neuroticism concerns habitual levels of emotional volatility and anxiety versus emotional stability and calmness. Those high on neuroticism are particularly prone to anxiety and acutely sensitive to risks (John, 2021). A key way in which neuroticism can affect financial behavior is through its expression as lower emotional stability, and anxious avoidance of risk. For example, in experimental studies, Oehler et al. (2018) found that neuroticism significantly influenced behavior in an experimental asset market. More neurotic individuals held less risky assets in their financial portfolios than less neurotic individuals do. Fenton-O’Creevy and Furnham (2020a; 2020b) found those higher in neuroticism to be less capable at planning ahead, choosing financial products and making ends meet, and more prone to experience financial distress.

Nyhuis and Webley (2001) found that emotional stability (low neuroticism) was positively associated with liquid savings and savings intention. In a study of professional traders in investment banks, Fenton-O’Creevy et al. (2005) found levels of neuroticism to be inversely associated with trading performance. Xu et al. (2015) found that neuroticism positively, correlated with young adult’s financial distress. Duckworth and Weir (2010) found neuroticism to be associated with a penalty in lifetime earnings after taking into account education and cognitive variables. Mueller and Plug (2006) found emotional stability was associated with higher earnings among men but not among women. Mosca and McCrory (2016) examined how the Big Five traits contribute to net household wealth accumulation among 1172 couple pairs. They found emotional stability (low neuroticism) to be positively associated with wealth at the household level.

1.2 Conscientiousness

Conscientiousness relates to a person’s preference for following rules, hard-work, careful planning and organization, and preference for diligent completion of tasks; as opposed to being disorganized, unstructured, and unreliable. (John, 2021). It is the personality variable most consistently associated with work and career success. For example, Duckworth and Weir (2010) found that greater conscientiousness was associated with higher lifetime earnings after taking into account education and cognitive variables.

Turning to wealth effects, Nabeshima and Seay (2015) found conscientiousness to be positively associated with net worth. Mosca and McCrory (2016) found conscientiousness to be positively associated with wealth, but the relationship was only significant at the lower end of the wealth continuum. Balasuriya and Yang (2019) examined the role of personality traits in pension decision-making and found conscientiousness was related to both participation in pension schemes and paying more into personal pensions.

1.3 Agreeableness

Agreeableness concerns the extent to which the person is warm, agreeable, co-operative, trusting, and motivated to help others and act in their interests, versus cold, disagreeable, distrusting, and aggressive and disregarding of others’ interests (John, 2021). The evidence on agreeableness and financial behavior is less strong and less consistent than for neuroticism or conscientiousness. Overall, in Western cultures, low agreeableness is somewhat associated with business career success, albeit with somewhat mixed findings (Seibert & Kraimer, 2001). However, level of agreeableness is likely to have differential impacts in different kinds of work roles.

Nyhuis and Pons (2005) found that agreeableness was associated with lower wages, but among women only. In contrast, Mueller and Plug (2006) found agreeableness to be associated with lower earnings among men but not among women.

Turning to wealth effects, Nyhus and Webley (2001) found that agreeableness was negatively associated with savings and positively with debt. Nabeshima and Seay (2015) agreeableness to be negatively associated with net worth. Whilst Balasuriya and Yang (2019) found extraversion to correlate inversely with the amount contributed to personal pension plans.
1.4 Extraversion

Extraversion concerns sociability and assertiveness (versus social reservation and timidity), and is also associated with impulsiveness. There is some evidence that extraversion is associated with career success, especially in occupations involving important interpersonal components (Seibert & Kraimer, 2001). In line with this relationship with career success, there is some evidence of a modest positive relationship between extraversion and income (Viinikainen et al., 2010).

However, there is also evidence that the impulsivity element of extraversion leads to an association between extraversion and some adverse financial outcomes. First, there is evidence that higher extraversion is associated with lower savings and higher debt (Brown & Taylor, 2014; Davey & George, 2011; Nyhus & Webley, 2001). Balasuriya and Yang (2019) examined the role of personality traits in pension decision making and found extraversion correlated with non-participation in private pensions and with lower contributions when participating. However, in contrast, Mosca and McCrory (2016) and Nabeshima and Seay (2015) found extraversion to be positively associated with wealth accumulation.

Secondly, in line with their greater impulsiveness, extroverts have been found (in experimental studies) to pay higher prices for financial assets and buy more overpriced assets than less extraverted individuals. Similarly, Fenton-O’Creevy et al. (2005) found extraversion to be associated with lower performance among investment bank traders.

1.5 Openness

Openness concerns active imagination, preference for variety, intellectual curiosity and willingness to challenge authority versus closed-mindedness, dogmatism, and conservative attitudes. It is the personality factor most strongly associated with intellect and intelligence (Fenton-O’Creevy et al., 2005; John, 2021).

Whilst Fenton-O’Creevy et al. (2005) found a positive association between openness and investment bank trader performance, Kleine et al. (2016) found an association between openness and overtrading among private market investors.

Balasuriya and Yang (2019) found openness to be negatively correlated with saving via personal pensions. Fenton-O’Creevy and Furnham (2020a; 2020b) found openness to be associated with greater care in choosing financial products but less planning ahead and lower ability to make ends meet.

1.6 Summary

In summary, there is consistent evidence of relationships between higher conscientiousness and positive financial behaviors and outcomes, including wealth accumulation, but more mixed results on other personality factors.

2 THIS STUDY

In this paper we report on secondary analysis of a large data set drawn from an overlapping sample of participants in two major surveys conducted in collaboration with the BBC (the UK public service TV and radio broadcaster).

A particular contribution of this study is that the data allowed us to explore the role of the Big Five personality traits in three distinct forms of wealth accumulation: property wealth, savings/investments, and valuable physical items. The measurement of personality in a separate survey to wealth measures also reduces the potential for common method variance.

2.1 Hypotheses

As discussed in the introduction, there is ample evidence of a relationship between personality and money management and some evidence of significant effects of personality variables on wealth accumulation. Hence, we hypothesize:

**H1.** the Big Five personality variables will jointly explain significant variance in wealth.

Conscientiousness is the strongest personality factor candidate to be associated with wealth accumulation. Conscientious individuals are planful, organized and hardworking; all factors that relate to wealth accumulation and protection. As John (2021:121) argues “conscientiousness describes socially prescribed impulse control that facilitates task and goal directed behavior such as thinking before acting, delaying gratification, following norms and rules and planning organizing and prioritizing tasks”.

As noted in the introduction, other studies have also found a positive relationship between conscientiousness and sound financial management and wealth accumulation.

Thus, we hypothesize:

**H2.** there will be a positive association between conscientiousness and all three forms of wealth accumulation.
Given the mixed results in prior research we did not entertain specific hypotheses concerning the other four personality factors. Although there is good reason to suspect that many would be negatively associated with wealth: extraverts may make too many impulsive economic decisions; agreeable people may be too “generous” with their money; those high on neuroticism/emotionality may make decisions based more on emotion than careful deliberation.

3 | METHOD

3.1 | Procedure

Data for this study were derived through secondary analysis of a UK sample which combined data from two existing data sets, with a significant overlap in participants (who were identifiable from the use of unique participant IDs common to the two surveys). Both surveys were carried out by researchers in collaboration with the BBC public broadcaster. The first study provided measures of personality (Jokela, et al., 2015). The second (carried out around a year later) was a survey of attitudes to money. This contributed data on wealth measures and key demographic variables (Fenton-O’Creevy & Furnham, 2017). The resulting dataset combining responses from both surveys is deposited with the UK data service (Fenton-O’Creevy & Furnham, 2017) and is available via registration with this service. Both surveys opened with information for subjects on how data would be used and how their privacy would be protected and by asking participants to explicitly indicate their informed consent to participation and use of their data and understanding of their right to withdraw such consent. All data was anonymized. Both studies received approval after institutional ethics review.

3.2 | Participants

There were 3240 participants who completed both surveys (after discarding 629 responses with unusable data); of which 32.6% were male. 37.7% were between 18 and 30 years, 47.2% between 31 and 50 years and the remainder 51 or over. 93.5% classified themselves as white British. 32.6% had secondary school qualifications or lower, 47.9% had an undergraduate degree or equivalent and 19.5% a postgraduate degree. 23.7% had household income less than £20,000 p.a., 47.1% between £20,000 and £49,999, 18.4% between £50,000 and £74,999 and 10.8% earned £75,000 or more.

3.3 | Measures

We draw on three measures of wealth from the dataset which were assessed through the following questions:

Property wealth: “If you own your own home, what do you think its value is less any mortgage you have? If you have more than one property, include the value of all your properties, less any mortgage.” (1 = “£0 or less”, to 6 = £500,000 or more).

Savings and investments: “If you have any savings and other financial investments (such as bank and building society accounts, unit trusts, insurance bonds with a cash in value, shares and so on), what do you think is the value of these savings and investments? Please note this value must be minus any money you owe on credit cards, personal loans, or other debts, but you do not need to deduct your mortgage. Do not include the value of any pensions or money in any pension schemes.” (1 = less than £0, to 8 = £50,000 or more).

Physical items: “If you have any physical items that you think of as part of your wealth (e.g. car, caravan, artwork, jewelry, gold, valuable antiques, wine held as an investment, and so on) what do you think is the value of these items?” (1 = £0 or less to 8 = £50,000 or more).

The dataset does not include a measure of pension wealth, in part due to the complexity for many participants in accurately estimating such assets.

Demographic variables: Age (in years); gender (female = 1, male = 0); education (1, “did not complete GCSE, CSE, O levels”, to 6, “postgraduate degree”); and household income (1 “up to £9,999 per year”, to 8, “£150,000 or more per year”).

Personality. Personality traits were assessed by the 44 questions from the Big Five Inventory (John, Nau- mann, & Soto, 2008) to provide scores on the big five personality traits: Extraversion ($\alpha = 0.85$), Neuroticism ($\alpha = 0.83$), Conscientiousness ($\alpha = 0.83$), Agreeableness ($\alpha = 0.76$), and Intellect/Openness ($\alpha = 0.80$), scored to range from 1 to 5.

3.4 | Analysis

We first calculated Pearson correlations between all variables. Second, we conducted multivariate multiple regression, to account for relationships between the dependent variables with the three wealth measures entered jointly as dependent variables. Multivariate multiple regression is a method for modeling multiple dependent variables with a single set of predictor variables. It reduces risks of overestimating model significance and fit where the dependent variables have significant intercorrelations; since, in the test of the overall model, this method
produces significance tests for the predictors of the dependent variables which control for all other relationships in the model, including via the other dependent variables (Dattalo, 2013). This analysis was carried out using the multivariate version of the general linear model procedure in SPSS 25, entering independent variables as covariates. We also carried out a supplementary analysis to estimate unique variance explained jointly by personality variables by entering independent variables hierarchically in two blocks in the order: demographic variables then personality variables.

4 | RESULTS

The correlational results are shown in Table 1. They show age and household income are consistently the highest correlates of all three wealth measures.

Older people with higher income tend to have greater wealth. Gender and education are more modest but mostly significant measures indicting males more than females and more educated more than less educated have more wealth as assessed by our variables.

Our major focus, personality, showed interesting findings, the most consistent of which was that conscientiousness was positively and neuroticism negatively related to all three variables. The three highest correlations with our wealth variables were for age, household income and trait conscientiousness. Education, gender, and trait neuroticism were the next highest correlates.

Table 2 provides an omnibus test of the overall model. It shows the multivariate tests for the effect of each independent variable jointly on the three wealth measures. Partial eta squared values indicate the amount of unique variance explained by each independent variable in the three wealth measures once all other modeled relationships are partialled out (Richardson, 2011). We report partial eta squared values to allow comparison of the effect size of each independent variable on the dependent variables. Consistent with the correlational results, the greatest variance explained is by age and household income then conscientiousness.

Table 3 reports regression parameters and partial eta squared values for the independent variables, for each of the wealth measures. We also carried out a supplementary hierarchical regression entering first demographic, then personality variables to estimate the additional unique variance accounted for by personality variables beyond that accounted for by demographics. Differential R² values are reported at the foot of the table.

Demographic variables explained around half of variance in property wealth, around a fifth for savings and investments and 15% for wealth held as physical items.
The Big Five traits explained an additional 1% of variance in property wealth, and 2% in savings/investments and physical items. For savings and investments, and physical items the variance explained by personality was dominated by the role of conscientiousness (with higher conscientiousness associated with higher wealth). However, for property wealth, similar levels of variance were explained by a positive association with conscientiousness and an inverse association with openness.

The other traits showed an interesting, interpretable, and mixed pattern. Agreeableness was inversely associated with savings and investments, possibly because of the altruism associated with Agreeableness. Extraverts had less in savings but more in (possibly precious) objects perhaps because of their greater tendency to impulsive spending (Fenton-O’Creevy & Furnham, 2020a; 2020b; Shehzadi et al., 2016). Openness was negatively associated with property wealth possibly because that sort of

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<th>Table 2 Multivariate tests of independent variable effects on wealth variables.</th>
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*Exact statistic, hypothesis df = 3, error df = 3228.

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<th>Table 3 Multivariate multinomial regression parameters.</th>
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Note: *p < 0.05; **p < 0.01; ***p < 0.001.
wealth “ties one down” for long periods of time and prevents the experimentation that is associated with being open-to-experience. Neuroticism showed an inverse relationship with physical items suggesting perhaps that emotionally volatile people invest in experiences rather than possessions.

5 | DISCUSSION

It is clear that, mostly, people accumulate wealth over the life course and that wealth accumulation is easier with higher income. Further, there are obvious sociological variables that relate to wealth accrual such as education. Better educated people have better paid jobs and invest their money more wisely. Further they are part of households that share assets, lifestyle and aspirations.

Our interests are in individual difference factors and the incremental validity over and above demographic factors. We were fortunate in this study to have data to explore these issues. More importantly we had three rather different, wealth variables, albeit that this was simple self-report data.

It is no surprise that conscientiousness is the strongest and most consistent correlate of our three measures of wealth. It is also the strongest predictor of nearly all positive work outcomes (Furnham, 2008). Conscientiousness is associated with hard-work, forward-planning, reliability, parsimoniousness, industriousness, and responsibility.

One of the most interesting findings is that Conscientiousness is more highly correlated with our three measures than either gender or education. Whilst the correlation between education and conscientiousness is positive and significant, it is low ($r = 0.04$). Both Conscientious and education tend to lead to better paid jobs, but it is probably the former that is associated with how money is invested and spent.

Following feedback from a reviewer we carried out further analysis entering each personality trait separately to check for suppressor effects from the other personality variables. The significance and direction of each personality effect remained the same. Whilst prior research has found extraversion to be positively related to economic wellbeing this is primarily via career success and salary level, i.e. income (e.g., Seibert & Kraimer, 2001). This study shows a modest but significant correlation between extraversion and income (0.09). However, in relation to wealth, both correlation and regression results show a modest but significant inverse relationship between extraversion and savings and investments but a positive relationship with wealth held in physical items.

The finding that higher extraversion is associated with lower savings and investments, but higher value of physical items is likely to relate to the known association between Extraversion and impulsiveness. It consistent with the experimental finding that extraverts are more likely to purchase overpriced assets (Oehler et al. (2018)) leading to poor investment decisions. This finding is also similar to the finding that higher extraversion is associated with lower performance among investment bank traders (Fenton-O’Creevy et al., 2005). Fenton-O’Creevy et al. also show extraversion to be associated with greater illusions of control, showing these to be associated with being less likely to think through all the costs and payoffs when making financial decisions.

The correlational results showed that neuroticism was negatively associated with our three wealth measures (although only significantly associated with physical wealth in regressions, suggesting that wealth effects may be mediated via income). The data suggest that neuroticism is also negatively associated with work success, a major source of income. It is possibly the unstable nature of neurotics than makes them poor at wealth management.

We accept that the major limitation of this study was the fact that our three dependent variables were all based on self-report, though we have little reason to suspect serious errors of impression management or inaccuracy. It is always more desirable to have actual financial data though difficult to obtain. Whilst variance explained by personality factors in this study is modest, it is plausible that true relationships are stronger. Modeled relationships are attenuated by measurement error and there are number of possible reasons why this may be the case in this data including variable levels of attention among respondents. There may also be other reasons for attenuated relationships in our results. First, we only measure personality at the level of the main factors in the Big Five model. It is possible that attention to the sub-facets of these factors would demonstrate stronger relationships. Second, wealth may be inherited or earned, and we are unable to distinguish between these. Inheritance effects may dilute the power to detect relationships that depend on respondent behaviors. Finally, in marriage and other long-term partnerships, both partner’s personalities may play a role in wealth accumulation and protection. The data in this study only relate to the personality of the respondent, not their spouse or partner.

We were fortunate in having three indices of wealth which were only moderately positively correlated, and this suggests avenues for future research. Some people invest in property, others in possessions (art, jewelry) and some in stock-markets as well as financial institutions. It would be of particular interest to see further research on the role of personality traits in the preference for different forms of wealth accumulation and protection, for
example distinguishing between saving in low-risk, interest-bearing, accounts versus investment in more volatile financial assets.

6 | CONCLUSIONS

Our study confirms that income represents opportunities to accumulate wealth and age represents time in which to accumulate. However, as Henry Ford is reputed to have observed “you don’t get rich by what you earn. You get rich by what you don’t spend.” Or rather whilst income matters, it matters a great deal what you do not spend and the care with which you deploy your savings to make them work for you.

Our study suggests that personality traits may be an important influence on choices about wealth accumulation and on the care with which it is carried out. First, our results suggest that the most important personality factor for wealth accumulation is conscientiousness. People high on this trait are likely to treat the management of their finances seriously and bring a serious, planful and diligent approach to saving and investing. The associations of other personality factors with wealth accumulation are more modest but they may, nonetheless, have implications for how to best advise individuals about their finances. First we should note that personality changes only slowly over the life course or in response to major life events. However, our results suggest that understanding clients’ personality profiles may be helpful in tailoring advice and services to their individual needs. For example, our results suggest that extrovert, agreeable clients who are low on conscientiousness may need additional support to make regular savings and extroverts may be more prone to impulsive spending on physical items reducing capacity to invest.

Clients who are high on agreeableness may be keen to balance taking care of their own financial future with providing help to others in their kinship and friendship networks. Their high trust may also make them more vulnerable to financial scams and more predatory financial products. Clients high in neuroticism may need greater support with managing the anxiety of investing in risk bearing assets and in managing the emotions induced by market volatility.

Thus, the results of this, and related studies, would be of interest to financial planners, financial advisors and government institutions. There are also a number of organizations that offer financial advice based on money attitudes and beliefs (Klontz et al., 2014) which we know are related to personality traits (Furnham, 2014).

Finally, we note that our results add to a rather mixed picture of research results on personality and financial outcomes. Further research might usefully explore which contextual factors moderate these relationships, potentially explaining contrasting findings. Given the accumulating range of evidence, it may also be an appropriate time to conduct a meta-analysis of findings to date.

ACKNOWLEDGEMENTS

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The data is available via registration with the UK Data Service (https://doi.org/10.5255/UKDA-SN-8132-1). The data collection is available to users registered with the UK Data Service. There are some conditions imposed by the BBC which is joint owner of the IP in the data set. Access is limited to applicants based in HE/FE institutions, for not-for-profit education and research purposes only (who must register with the data service to gain access to the data). There is no charge for registration or access.

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ENDNOTE

1 Partial eta squared, \( \eta^2_p = \frac{\text{effect sum of squares}}{\text{effect sum of squares + error sum of squares}} \).

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