



Short Communication

The role of personality in individual differences in yearly earnings

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ABSTRACT

We examined the role of personality in accounting for sex differences in yearly earnings among Australians ($N = 533$). Men reported they earned modestly more money than women did, as did married and fully employed people, but these three factors did not interact. Narcissism, psychopathy, extraversion, conscientiousness, and limited neuroticism predicted self-reported higher earnings; associations that differed little by participant's sex, although a slight pattern suggests women may pay a higher pay penalty for neuroticism but benefit more from conscientiousness than men do. Narcissism and neuroticism mediated sex differences in self-reported income suggesting men who were more narcissistic and women who were less neurotic reported more yearly earnings. The results are discussed in terms of how individual differences may play a role in apparent sex differences in earnings.

Women appear to be at a disadvantage, relative, to men in terms of how much money they make annually, but why this is the case is a matter of debate.¹ The standard and accepted explanation as to why this happens suggests this must be a function of institutional/societal-level sex-based discrimination (Watson, 2010; but see Correll & Benard, 2007). Alternative explanations center around sex differences in vocational interests which account for over half of the sex difference in income (Blau & Kahn, 2007); women seem particularly interested in “people-oriented” jobs (e.g., nurse, teacher) over the last 40 years (Lippa, Preston, & Penner, 2014). In this study, we examine the role domain-general personality traits play in accounting for variance in income.

We consider the role of the Big Five (i.e., openness, conscientiousness, extraversion, agreeableness, and neuroticism) and Dark Triad (i.e., narcissism, psychopathy, and Machiavellianism) traits in accounting for variance in income. These taxonomies capture a range of personality variability with implications for vocational interests (Jonason, Wee, Li, & Jackson, 2014; Mount, Barrick, Scullens, & Rounds, 2005), job performance and satisfaction (Hurtz & Donovan, 2000; Judge & Bono, 2001), and workplace roles (Judge & Bono, 2000; O'Connor & Jackson, 2010). Given the centrality of these traits in explaining work-related variables, it seems reasonable that they may account for variance in income as income is derived from the work individuals engage in.

First, we expect certain traits to facilitate more earnings in people.

For example, traits like psychopathy and narcissism may enable individuals to strive for jobs characterized by dominance and risk (Jonason, Slomski, & Partyka, 2012), thereby facilitating greater earnings. In contrast, traits like extraversion may enable job success through sociability and conscientiousness may encourage people to be dutiful—a trait associated with performance in the workplace (Hurtz & Donovan, 2000). In contrast, a penalty may be paid in terms of income for neuroticism as it may undermine satisfaction and job performance (Judge & Bono, 2001). The limited empirical research on personality and earnings suggests that agreeableness has a strong influence on earnings (Mueller & Plug, 2006).

Second, if we document the existence of a sex difference, any such difference begs the question as to why it exists. Claims for income inequality that often rely on national databases are merely descriptive (DeNavas-Walt, Proctor, & Smith, 2011). The presence of a difference does not, on its own, reveal any systematic bias against women and/or in favor of men. In this study, we consider whether sex differences in income may be a (partial) function of (mediated/confounded by) sex differences in personality traits. There are systematic, cross-culturally robust sex differences in the Big Five traits (Schmitt, Realo, Voracek, & Allik, 2008) and the Dark Triad traits (Jonason et al., 2017), suggesting women are more neurotic and agreeable than men and men are more narcissistic, psychopathic, and Machiavellian than women. If these traits are associated with income, they may operate as mediators that account for sex differences in income.

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¹ Australian Governmental report found at:

www.wgea.gov.au/sites/default/files/BCEC%20WGEA%20Gender%20Pay%20Equity%20Insights%202017%20Report.pdf

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Table 1
Correlations between annual earnings and personality overall and in men and women.

	Earnings			z
	Overall	Women	Men	
Age in years	−0.04	−0.06	−0.06	0.05
Machiavellianism	0.06	0.06	0.03	0.25
Narcissism	0.19**	0.20**	0.13*	0.82
Psychopathy	0.11*	0.13	0.04	1.00
Extraversion	0.20**	0.17*	0.22**	−0.56
Agreeableness	−0.05	0.01	−0.07	0.93
Conscientiousness	0.10*	0.14*	0.09	0.56
Neuroticism	−0.16**	−0.19**	−0.10	−1.06
Openness	−0.06	−0.06	−0.02	−0.41

Note. z is Fisher's z to compare independent correlations.

* $p < 0.05$.

** $p < 0.01$.

1. Method

1.1. Participants and procedure

Australian volunteers ($N = 533$; 47% women), aged 18–84 years ($M = 45.03$, $SD = 16.78$), participated (from unique IP addresses) in a previously reported study (Jonason & O'Connor, 2017). Participants were recruited using a large panel research company which has access to 223,899 Australians. Fifty-five percent of the sample was employed (23% part-time, 33% full-time) and 42% were currently not employed (i.e. either retired, a full-time parent/carer, unemployed). Thirty-one percent of the sample earned less than \$30 K/year from their job, 22% earned \$30 K–\$55 K, 15% earned \$55 K–\$80 K, 11% earned \$80 K–\$110 K, 7% earned more than \$110 K, and 11% refused to answer (excluded in analyses).² Forty-four percent of the sample were married, 38% were single, and 15% were in a relationship. The sample roughly matched the Australian population in terms of age, gender, and geographic location. Participants came from a range of industries including health care, education, hospitality, construction, and retail. The participants were informed of the study's nature and provided their demographic details, completed self-report measures, and were then debriefed.

1.2. Measures

The Big Five personality dimensions were measured using the 60-item BFI-2 (Soto & John, 2017). The participants were asked the degree to which they agreed (1 = *Disagree strongly*; 5 = *Agree strongly*) with statements designed to measure the Big Five, such as: “Is inventive, finds clever ways to do things” (i.e., openness), “Is dependable, steady” (i.e., conscientiousness), “Has an assertive personality” (i.e., extraversion), “Is respectful, treats others with respect” (i.e., agreeableness), and “Is moody, has up and down mood swings” (i.e., neuroticism). We summed the appropriate item to create indices each with Cronbach's α s ranging from 0.78 to 0.91.

The Dark Triad traits were measured using the 27-item Short Dark Triad scale (Jones & Paulhus, 2014). The participants were asked the degree to which they agreed (1 = *Disagree strongly*; 5 = *Agree strongly*) with statements like: “I'll say anything to get what I want” (i.e., psychopathy), and “I insist on getting the respect I deserve” (i.e., narcissism), and “it's not wise to tell your secrets” (i.e., Machiavellianism). Items were summed to create indices for psychopathy ($\alpha = 0.82$), narcissism ($\alpha = 0.78$), and Machiavellianism ($\alpha = 0.83$).

² We measured annual salary using five ordinal categories because pilot research indicated that participants were less likely to respond to an open-ended salary question. Given the distribution, we treated earnings as a continuous measure.

2. Results

The essential, first question is whether there is a sex differences in earnings. Men ($M = 2.51$, $SD = 1.29$) earned more money yearly ($t(475) = -3.74$, $p < 0.01$, Cohen's $d = -0.34$) than women did ($M = 2.10$, $SD = 1.27$); a modest sex difference. Understandably, those who were employed full-time ($n = 168$; $M = 3.29$, $SD = 1.15$) made more ($F(2, 474) = 116.25$, $p < 0.01$, $\eta_p^2 = 0.33$) than those employed part-time ($n = 110$; $M = 2.08$, $SD = 1.12$) and those unemployed ($n = 199$; $M = 1.62$, $SD = 0.95$). And, those who were married ($n = 211$; $M = 2.53$, $SD = 1.31$) made more ($F(2, 474) = 5.72$, $p < 0.01$, $\eta_p^2 = 0.02$) than those in a relationship but not married ($n = 78$; $M = 2.24$, $SD = 1.33$) and those who were single ($n = 188$; $M = 2.10$, $SD = 1.23$). Given these three main effects, we tested a 2 (participant's sex) \times 3 (relationship status) \times 3 (employment status) between-subjects ANOVA, however, when we did so, the sex difference dropped out whereas employment status ($F = 86.40$, $\eta_p^2 = 0.27$) and relationship status remained ($F = 4.79$, $\eta_p^2 = 0.01$). There was no three-way interaction nor any two-way interactions. When we removed relationship status, the sex difference in earnings remained allusive with no interaction still, but when we removed employment status (and replaced relationship status), we recovered the sex difference in earnings ($F = 6.76$, $\eta_p^2 = 0.01$) and no interaction was found, again. Therefore, we tested for sex differences in employment status ($\chi^2 = 25.12$, $p < 0.01$, $\Phi = 0.22$) and relationship status ($\chi^2 = 6.65$, $p < 0.05$, $\Phi = 0.11$). More women were unemployed ($n = 124$) and working part-time ($n = 74$) than men were ($n = 109$, $n = 49$), whereas more men ($n = 121$) were employed full-time than women were ($n = 61$). More men ($n = 118$) were single than women were ($n = 94$), more women were in a relationship ($n = 51$) than men were ($n = 33$), and more men ($n = 128$) were married than women were ($n = 114$).

Table 1 contains the correlations between personality traits and yearly earnings. Those who were narcissistic, psychopathic, extraverted, conscientious, and low on neuroticism earned more money. These correlations were generally the same in men and women, with no significant differences in the magnitudes of the correlations. However, two notable—albeit weak—discrepancies emerged. Women who were more neurotic and conscientious earned less money per year than women who were less neurotic and more conscientious; effects that did not emerge in men.

Last, we turn to the potential for mediation of sex differences in income as a function of personality traits. The only personality traits we treated as mediators were those correlated with earnings and had sex differences (see Jonason & O'Connor, 2017) leaving narcissism ($t = -3.38$, $p < 0.01$, Cohen's $d = -0.29$), psychopathy ($t = -5.37$, $p < 0.01$, $d = -0.47$), and neuroticism ($t = 3.84$, $p < 0.01$, $d = 0.33$). When including all three traits in a hierarchical multiple regression, participant's sex accounted for 2% ($\Delta F = 11.63$, $p < 0.01$) of the variance in income and the addition of these three traits accounted for 4% ($\Delta F = 4.40$, $p < 0.01$) more with a partial mediation effect such that the correlation for sex ($\beta = 0.16$, $p < 0.01$) shrank when mediated by the three personality traits ($\beta = 0.10$, $p < 0.05$). Next, we examined the mediation effects in each trait independently. There was partial mediation for neuroticism ($\Delta R^2 = 0.02$; $\Delta F = 9.73$, $p < 0.01$) and narcissism ($\Delta R^2 = 0.03$; $\Delta F = 13.29$, $p < 0.01$), but not for psychopathy ($\Delta R^2 = 0.01$; $\Delta F = 2.94$, $p < 0.09$). It appears that, women report less earnings because they are more neurotic than men and men report more income because they are more narcissistic than women.

3. Discussion

Gender equality is a major socio-political issue and, therefore, understanding why apparent discrepancies exist is an essential task of science. In this brief report, we have attempted to understand individual differences in income from the perspective of personality

psychology. We found a few important insights. First, those who were extraverted, psychopathic, narcissistic, not too neurotic, and conscientious reported more income. These findings are broadly consistent with the limited existing research in this area (Mueller & Plug, 2006). These associations may be a function of how these traits influence vocational choice or they may be a function of specific work behaviors controlling for vocational choice/position (Hurtz & Donovan, 2000; Jonason et al., 2014; Judge & Bono, 2001). Second, the magnitude of the sex difference in income was rather small, consistent with work suggesting this difference may often be oversold (Chambers, Swan, & Heesacker, 2014). And third, personality traits—narcissism and neuroticism in particular—accounted for 4% more variance in income than sex of the participant alone. We found that narcissism facilitated more income in men whereas neuroticism undermined earnings in women. We suspect the traits influence downstream factors like job choice, behaviors, and satisfaction that influence earnings differently in men and women (Jonason et al., 2012, 2014). For example, narcissism may enable the prestige-seeking behavior that could account for sex differences in income (Goldin, 2014). Alternatively, neuroticism in women may relegate them to lower paying jobs more than it does men. Indeed, women, who tend to score higher in measures of neuroticism than men do (Schmitt et al., 2008), often gravitate towards “people-oriented” jobs which are low in compensation (Lippa et al., 2014; Su, Rounds, & Armstrong, 2009).

4. Limitations and conclusions

Despite the novelty of our study, it has a few limitations. First, we did not rely on external assessments of income and, instead, relied on self-reported earnings. While this might seem problematic, as many database (e.g., census data) studies also rely on self-reported data, making conclusions based on our data is no more limited than conclusions drawn from database studies. Second, although we measured current marital status, we did not assess former marital status and, therefore, could not assess whether divorce influences salary differently for men and women. Third, we adopted a limited range of personality traits. We provided only some evidence that personality differences in men and women account for some of the variance in individual differences in earnings. As we found only partial mediation, there is reason to expand the network of traits used to understand individual differences in income. Fourth, the personality traits we examined could be construed as distal traits and may only influence income indirectly through other factors like occupational choice, hours worked, and value systems. To understand how personality informs research on individual differences in income more fully, structural equation models that include distal traits (as we have) and proximal traits working together to predict earnings. Such work will likely account for substantially more variance in earnings, as proximal traits are theoretically more closely tied to behavioral outcomes than distal traits. Future work should attempt to address these limitations.

In conclusion, we have advanced the case that one way to understand sex differences in income comes down to the internal motivational systems attached to personality traits. We found that domain-

general personality traits (i.e., Big Five, Dark Triad) can be used to account for individual differences in self-reported earnings. We found a small sex difference in income which was partially mediated by individual differences in neuroticism and narcissism, suggesting that neuroticism undermines (self-reports of) income in women but facilitates it in men. While far more research is called for, we have made some movement towards an individual-level perspective—as opposed to institutional-level—in accounting for variance in income.

References

- Blau, F. D., & Kahn, L. M. (2007). The gender pay gap—Have women gone as far as they can? *Academy of Management Perspectives*, 21, 7–23.
- Chambers, J. R., Swan, L. K., & Heesacker, M. (2014). Better off than we know: Distorted perceptions of incomes and income inequality in America. *Psychological Science*, 25, 613–618.
- Correll, S. J., & Benard, S. (2007). Getting a job: Is there a motherhood penalty. *American Journal of Sociology*, 112, 1297–1339.
- DeNavas-Walt, C., Proctor, B. D., & Smith, J. C. (2011). Income, poverty, and health insurance coverage in the United States: 2010 (U.S. Census Bureau Current Population Reports P60-239). Retrieved from: <http://www.census.gov/prod/2011pubs/p60-239.pdf>.
- Goldin, C. (2014). A pollution theory of discrimination: Male and female differences in occupations and earnings. In L. P. Boustan, C. Frydman, & R. A. Margo (Eds.). *Human capital in history: The American record* (pp. 313–348). Chicago, IL: University of Chicago Press.
- Hurtz, G. M., & Donovan, J. J. (2000). Personality and job performance: The Big Five revisited. *Journal of Applied Psychology*, 85, 869–879.
- Jonason, P. K., Foster, J. D., Oshio, A., Sitnikova, M., Birkas, B., & Gouveia, V. V. (2017). Self-construals and the Dark Triad traits in six countries. *Personality and Individual Differences*, 113, 120–124.
- Jonason, P. K., & O'Connor, P. J. (2017). Cutting corners at work: An individual differences perspective. *Personality and Individual Differences*, 107, 146–153.
- Jonason, P. K., Slomski, S., & Partyka, J. (2012). The Dark Triad at work: How toxic employees get their way. *Personality and Individual Differences*, 52, 449–453.
- Jonason, P. K., Wee, S., Li, N. P., & Jackson, C. (2014). Occupational niches and the dark triad traits. *Personality and Individual Differences*, 69, 119–123.
- Jones, D., & Paulhus, D. (2014). Introducing the Short Dark Triad (SD3): A brief measure of dark personality traits. *Assessment*, 21, 28–41.
- Judge, T. A., & Bono, J. E. (2000). Five-factor model of personality and transformational leadership. *Journal of Applied Psychology*, 85, 751.
- Judge, T. A., & Bono, J. E. (2001). Relationship of core self-evaluations traits—self-esteem, generalized self-efficacy, locus of control, and emotional stability—with job satisfaction and job performance: A meta-analysis. *Journal of Applied Psychology*, 86, 80–92.
- Lippa, R. A., Preston, K., & Penner, J. (2014). Women's representation in 60 occupations from 1972 to 2010: More women in high-status jobs, few women in things-oriented jobs. *PLoS*, 9, e95960.
- Mount, M. K., Barrick, M. R., Scullens, S. M., & Rounds, J. (2005). Higher-order dimensions of the Big Five personality traits and the big six vocational interest types. *Personnel Psychology*, 58, 447–478.
- Mueller, G., & Plug, E. (2006). Estimating the effect of personality on male and female earnings. *ILR Review*, 60, 3–22.
- O'Connor, P. J., & Jackson, C. J. (2010). Applying a psychobiological model of personality to the study of leadership. *Journal of Individual Differences*, 31, 185–197.
- Schmitt, D. P., Realo, A., Voracek, M., & Allik, J. (2008). Why can't a man be more like a woman? Sex differences in Big Five personality traits across 55 cultures. *Journal of Personality and Social Psychology*, 94, 168–182.
- Soto, C. J., & John, O. P. (2017). The next Big Five Inventory (BFI-2): Developing and assessing a hierarchical model with 15 facets to enhance bandwidth, fidelity, and predictive power. *Journal of Personality and Social Psychology*, 113, 117–143.
- Su, R., Rounds, J., & Armstrong, P. I. (2009). Men and things, women and people: A meta-analysis of sex differences in interests. *Psychological Bulletin*, 135, 859–884.
- Watson, I. (2010). Decomposing the gender pay gap in the Australian managerial labour market. *Australian Journal of Labour Economics*, 13, 49–79.