Personality and Individual Differences 159 (2020) 109853

Contents lists available at ScienceDirect

Personality and Individual Differences

journal homepage: www.elsevier.com/locate/paid

Forethought and intelligence: How conscientiousness, future planning, and general mental ability predict net worth

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ARTICLE INFO

Keywords:
Personality
Conscientiousness
Intelligence
General mental ability
Net worth

ABSTRACT

This study examined a model in which conscientiousness is related to net worth through its relationship with future planning, and in which general mental ability (GMA) moderates the effects of future planning on net worth. Data for this study were drawn from 1,135 participants in the National Survey of Midlife Development in the United States. Results from an analysis of conditional indirect effects suggest that conscientiousness shared a positive, indirect association with net worth through its relationship with future planning that was realized only for individuals higher in GMA. In contrast, conscientiousness had no indirect association with net worth for those low in GMA. This study helps add to the understanding of how noncognitive (personality) and cognitive (ability) traits affect individual-level economic outcomes and offers an explanation for both *how* and *when* conscientiousness influences net worth. These findings may be particularly important given efforts to design interventions that help improve individual financial outcomes.

1. Introduction

The extent to which individuals save money and generate wealth is a matter that has far-reaching implications. Given the outcomes associated with higher levels of wealth, it is not surprising that researchers have devoted considerable efforts to increasing the extent to which individuals manage their money effectively, yet questions remain about the role that stable, individual-level differences may play in financial behaviors and the generation of wealth. This study examines the extent to which individual-level traits predict individual net worth. I predict that conscientiousness—one of the ubiquitous "Big Five" personality traits that describes the extent which people exhibit self-discipline, organization, carefulness, and reliability (McCrae & Costa, 1987)—will be positively associated with individuals' net worth. I also propose that the effects of conscientiousness on net worth are mediated by its influence on individuals' propensity to plan for the future. Finally, I include intelligence, also known as general mental ability (GMA; Gottfredson, 1997), as a moderator in this study. GMA is an important moderator to consider because even if consumers are predisposed to spend less, save more, and generate wealth they may not have the cognitive ability required to navigate the potential complexities of maximizing their net worth. I hypothesize that the indirect relationship between conscientiousness and investment behaviors will be realized only for individuals higher in GMA. Overall, this study will investigate both *how* and *under what conditions* conscientiousness is associated with net wealth. My conceptual model is presented in Fig. 1.

1.1. Conscientiousness and future planning

Conscientiousness and other Big Five personality traits vary between individuals and are considered highly stable over the course of adulthood (McCrae, 1993). Individuals who are high in conscientiousness are more reliable, have more self-discipline, and have stronger work ethic (McCrae & Costa, 1987). Conscientiousness shares a positive relationship with career outcomes such as job performance (Barrick & Mount, 1991) and occupational status (Judge, Higgins, Thoresen, & Barrick, 1999). It also predicts important financial outcomes. Individuals higher in conscientiousness are more likely to have higher incomes (Judge et al., 1999), credit scores (Berneth, Taylor, Walker, & Whitman, 2012), and net worth (Letkiewicz & Fox, 2014).

Personality research also suggests that a preference for future planning—the tendency to plan for the future—is a key indicator of the trait of conscientiousness. McCrae and Costa (1999) consider long-term planning to be one of the "Characteristic adaptations" of individuals that are high in conscientiousness (p. 164), and empirical work suggests that conscientiousness is related to future planning (Prenda & Lachman, 2001). Relatedly, Zimbardo and Boyd (1999) proposed that individuals could have various time perspectives that differ by their focus on the past, present, or future, and their results suggest that conscientiousness is most closely associated with a future time

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https://doi.org/10.1016/j.paid.2020.109853
Received 5 August 2019; Received in revised form 14 January 2020; Accepted 20 January 2020

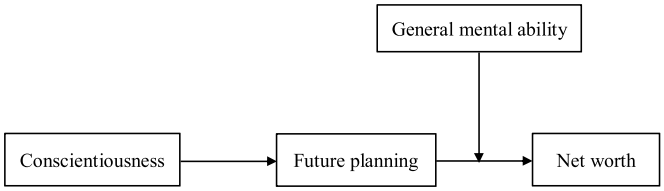

Fig. 1. Proposed study model.

perspective. Future planning is a determinant of individual behaviors that impact net worth (Howlett, Kees, & Kemp, 2008). It is associated with the extent to which individuals think about their future retirement needs (Mayer, Zick, & Marsden, 2011) and actually save for retirement (Jacobs-Lawson, & Hershey, 2005). The tendency to plan for the future is likely to decrease impulsive, consumption-based spending in the present and increase saving for the future. The ability to generate wealth can also depend on basic factors such as educational attainment and annual income, which are positively related to future planning (Prenda & Lachman, 2001). Thus, future planning is not only related to financial behavior at a given point in time, but also related to a set of broader outcomes—education level, employment, income, consideration of retirement needs, and actual retirement saving—that have an impact on net worth throughout the course of an individual's lifetime.

1.2. The role of GMA

Perhaps one of the most important determinants of net worth is GMA. The first reason for this is that GMA is a strong predictor of the antecedents of generating high levels of income. Educational attainment (Judge, Ilies, & Dimotakis, 2010; Palczyńska & Świst, 2018), job prestige (Huang, Shaffer, Li, & King, 2019), and job performance (Schmidt, Shaffer, & Oh, 2008) all share a positive association with GMA. The second reason is rooted in the broader application of GMA to the context of generating net worth. GMA can be defined as "a very general mental capability that, among other things, involves the ability to reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly and learn from experience. It is not merely book learning, a narrow academic skill, or test-taking smarts. Rather, it reflects a broader and deeper capability for comprehending our surroundings—'catching on,' 'making sense' of things, or 'figuring out' what to do" (Gottfredson, 1994, p. 13).

This definition of GMA is important because, "…performance of any kind is primarily dependent on learning. Since data shows that all complex learning is predicted by general [mental] ability…performance in all complex tasks will be closely predicted by general [mental] ability" (Hunter, 1986, pp. 346–347). As it relates to the current study, GMA should be related to net worth because the accumulation of net worth requires learning, problem solving, and decision making. For example, Lusardi, Mitchell, and Curto (2010) reported a relationship between GMA and the understanding of interest rates, inflation, and the benefits of diversifying risk.

Though I expect GMA to be directly related to net worth, this study is more concerned with the potential moderating effects that GMA has on the relationship between future planning and net worth. If one assumes that someone who focuses on planning for the future also has a desire to increase their net worth, it might be safe to conclude that they will do just that. However, this conclusion could be premature if the same person does not also possess the basic ability and knowledge levels required to generate wealth. Said another way, future planning may capture an individual's propensity to spend less of their income and to save for the future, but they do not capture that individual's understanding of the financial concepts necessary to convert their discipline

Table 2
Regression results for mediating variable.

Variable	DV = Future planning Step 1	Step 2
Age	.04	.02
Gender	−.04	−.08**
Level of education	.21**	.21**
Previous year's wages	.13**	.10**
Married	.09	.06
Divorced/separated/widowed	−.04	−.05
Has student loan	.00	.01
Received inheritance	.06*	.07*
Conscientiousness		.23**
R2	.11	.16
Δ R2		.05**

Note: n = 1,135, *$p < .05$, **$p < .01$

Table 3
Regression results for moderation analysis.

Variable	DV = Net worth Step 1	Step 2	Step 3	Step 4
Age	.19**	.19**	.23**	.22**
Gender	.01	.00	.00	.00
Level of education	.19**	.19**	.13**	.13**
Previous year's wages	.17**	.16**	.15**	.14**
Married	.13**	.13**	.12*	.12*
Divorced/separated/widowed	−.01	−.01	−.01	−.01
Has student loan	−.10**	−.09**	−.10**	−.09**
Received inheritance	.15**	.15**	.13**	.13**
Conscientiousness		.01	−.01	−.01
Future Planning			.10**	.11**
General Mental Ability			.13**	.13**
Future planning X GMA				.11**
R2	.15	.15	.18	.19
Δ R2		.00	.02**	.01**

Note: n = 1,135, *$p < .05$, **$p < .01$

Table 1
Means, standard deviations, and correlations for study variables.

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
Age	54.98	11.90												
Gender	1.49	0.50	−.13**											
Level of education	7.65	2.53	−.08**	−.14**										
Previous year's wages	16.20	12.22	−.38**	−.19**	.28**									
Married	.72	.45	−.01	−.14**	.01	.09**								
Divorced/separated/widowed	.20	.40	.12**	.19**	−.09**	−.11**	−.80**							
Has student loan	.09	.29	−.21**	.02	.14**	.13**	.02	−.01						
Received inheritance	.43	.49	.27**	−.05	.07*	−.14**	.03	−.02	−.10**					
Conscientiousness	3.41	0.46	.01	.12**	.01	.09**	.07*	−.02	−.04	−.02	(.71)			
Future planning	2.92	0.57	−.01	−.12**	.26**	.19**	.14**	−.15**	.03	.07*	.24**	(.63)		
General mental ability	0.13	0.64	−.38**	.05	.37**	.27**	.02	−.08**	.13**	−.01	.05	.17**	(.67)	
Net worth	429,854.08	930,317.70	.17**	−.11**	.22**	.13**	.15**	−.13**	−.10**	.20**	.05	.20**	.13**	

Note: $n = 1,135$, *$p < .05$, **$p < .01$. Gender: 1 = male; 2 = female. Reliabilities of scales shown on diagonal in parentheses.

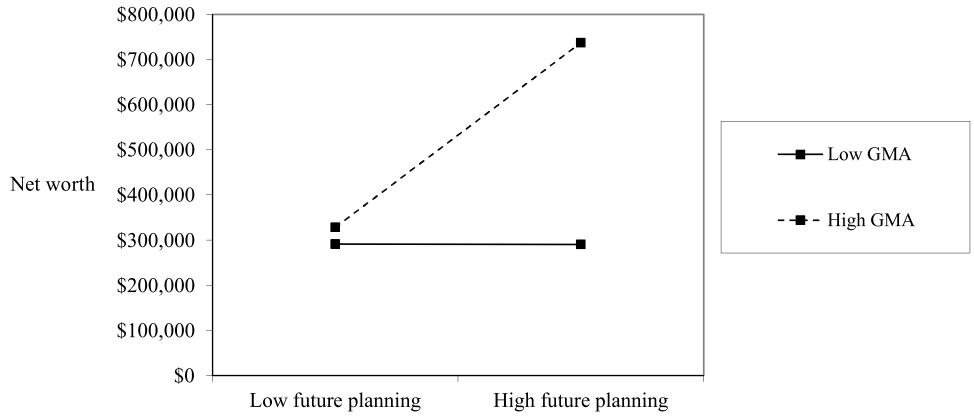

Fig. 2. Interaction of future planning and GMA.

Table 4
Conditional indirect effects of conscientiousness on net worth.

	Mediator = Future planning Indirect effect	Bootstrap *SE*	Bootstrap LLCI	Bootstrap ULCI
GMA 10th percentile	−13,877.42	18,061.96	−50,740.35	20,241.24
GMA 25th percentile	14,740.55	12,579.95	−9,677.46	39,750.04
GMA 50th percentile	**49,688.79**	**16,810.10**	**18,694.39**	**85,010.27**
GMA 75th percentile	**86,608.75**	**28,415.19**	**36,330.45**	**147,225.01**
GMA 90th percentile	**117,637.49**	**39,511.97**	**48,297.10**	**202,292.54**

Note: n = 1,135. LLCI = lower limit of 95% confidence interval, ULCI = upper limit of 95% confidence interval. Effect estimates with confidence intervals that do not include zero are shown in bold.

and planning into real financial outcomes. Borman, White, Pulakos, and Oppler (1991) refer to these differing traits as “will do” and “can do” traits. This distinction implies that beyond the motivation and desire to generate wealth, the ability to make good financial decisions is needed to realize high levels of net worth. My expectation is that net worth will be highest for individuals high in GMA and future planning. This is because in addition to the traits that predict the basic discipline required for saving and accumulating wealth, higher levels of cognitive ability are required to understand the financial information and concepts needed to make more complex financial decisions.

To summarize, I propose a model in which conscientiousness is positively related to future planning (Hypothesis 1), future planning is in turn positively related to net worth (Hypothesis 2), and GMA moderates the relationships between future planning and net worth (Hypothesis 3). Overall, this suggests a conditional indirect effects model in which moderation occurs in the second stage of a mediation process (Preacher, Rucker, & Hayes, 2007). Specifically, in the current study this suggests a model in which conscientiousness predicts the mediating variable of future planning, which subsequently interacts with GMA to predict net worth (Hypothesis 4).

2. Method

2.1. Participants

Data for this study originate from Phase II of the National Survey of Midlife Development in the United States (MIDUS II), a longitudinal panel study conducted by the MacArthur Foundation Research Network on Successful Midlife Development (Ryff et al., 2006). Phase I of the MIDUS study was conducted during 1995 and 1996 and included 7,108 participants between the ages of 25 and 74. Data for MIDUS II was collected from 2004 to 2006 via phone interviews and questionnaires from four samples: the main sample, a sample of siblings, a sample of twins, and an over-sample of respondents from metropolitan areas. GMA measures for this sample were administered on a separate occasion via phone. In an effort to ensure respondent data were independent of one another, in this study I used only respondents from the main sample and metropolitan oversample (Li, Shaffer, & Bagger, 2015). Respondents with missing data on study variables were omitted from the study. The final sample includes 1,135 respondents.

2.2. Measures

2.2.1. Conscientiousness

Conscientiousness was measured with five unipolar items (cf., Goldberg, 1992; Saucier, 1994) from the Midlife Development Inventory (MIDI) that were developed for the MIDUS study as described in Lachman and Weaver (1997) and Lachman (2005). The items asked respondents indicate how well an adjective described them on a scale of 1 (*a lot*) to 4 (*not at all*). These adjectives were as follows: *organized, responsible, hardworking, thorough*, and *careless* (reverse-scored). I averaged scores on these five items, rescoring them so that higher scores represented higher standing on conscientiousness. Previous studies have shown that a five-factor personality model is a good fit to the MIDI data (Joshaloo, 2018) and that conscientiousness scores from the MIDI correlate highly with scores from the NEO Short Form (r = 0.81; n = 60; Lachman, 2005) and with scores from a ten-item scale from the International Personality Item Pool (r = 0.80; n = 413; Huang et al., 2019). In the current study α = 0.71.

2.2.2. Future planning

To measure future planning I averaged five items from Prenda and Lachman (2001), who defined future planning “as a self-reported, future-oriented planning style of life management” (p. 209). Respondents indicated how well each of the following statements described them on a scale of 1 (*a lot*) to 4 (*not at all*): “I like to make plans for the future”, “I find it helpful to set goals for the near future”, “I have too many things to think about today to think about tomorrow”, “I live one day at a time”, and “I believe there is no sense planning too far ahead because so many things can change” (the latter three items were reverse-scored). All items were scored in this study such that higher scores indicated a stronger propensity to plan for the future (α = 0.63).

2.2.3. GMA

GMA was measured with the Brief Test of Adult Cognition by Telephone (BTACT). As explained in Stawski, Almeida, Lachman, Tun, and Rosnick (2010), the BTACT can be administered in about 20 min (Lachman, Agrigoroaei, Tun, & Weaver, 2014) and assesses five different cognitive ability areas: *episodic verbal memory, working memory span, executive function, inductive reasoning*, and *processing speed*. Convergent validity of composite scores on the BTACT with composite scores on a longer, 90-min cognitive battery is high ($r = 73$; $n = 292$). Parallel form and test-retest reliability of the BTACT is also high, ranging from 0.84 to 0.87 (Lachman et al., 2014). Finally, in validating the BTACT researchers "tested additional samples of adults on the BTACT both in person and by telephone and found no significant effect of mode of testing for any of the subtests…" (Tun & Lachman, 2006, p. 631). I combined respondent scores on these five areas into a single measure of GMA. Each of the subtests within the BTACT was scored on a different scale. Thus, prior to combining them into a single measure of GMA, I first converted each of the five scores into a *z*-score and then averaged the five *z*-scores to create an overall GMA score ($\alpha = 0.67$).

2.2.4. Net worth

An extensive section of the MIDUS questionnaire is related to personal finances and solicits data about respondents' retirement plans, home value, financial investments (e.g., stocks, bonds, certificates of deposit, mutual funds), and debts (e.g., mortgage, business loans, vehicle loans, credit card loans, education loans). Net worth was assessed with two questions. First, respondents were asked: "Suppose you (and your spouse or partner) cashed in all of your checking and savings accounts, stocks and bonds, real estate, and sold your home, your vehicles, and all of your valuable possessions. Then suppose you put that money toward paying off your mortgage and all of your other loans, debts, and credit cards. Would you have any money left over after paying your debts or would you still owe money?" To this first question, respondents selected from three response options: "Would have money left over", "Would still owe money", or "Debts would just about equal assets". Second, respondents were asked "How much would that be (that you had left over, or would owe)?" Respondents were also instructed that a best estimate was an acceptable answer and that they could answer "0″ if their debts and assets were about balanced.

2.2.5. Control variables

Taking cues from Letkeiwicz and Fox (2014), I controlled for respondent age, gender, level of education, previous year's wages, marital status, student loan status, and inheritance recipient status. Level of education was coded on a continuous scale of 1 (*no school/some grade school*) to 12 (*Ph.D., Ed.D., M.D., D.D.S, L.L.B, L.L.D, J.D., or other professional degree*). Previous year's wages were also coded on a continuous scale from 1 (*Less than $0*) to 47 (*more than $1,000,000*). I created three dummy variables for marital status: Married; never married; divorce/separated/widowed. Student loan status was a dichotomous variable that indicated whether respondents owed any student loan debt. I also controlled for whether respondents had received an inheritance worth $1,000 or more using a dichotomous item.

3. Results

Table 1 shows the means, standard deviations, and intercorrelations for all study variables. As shown in Table 2, after accounting for all control variables conscientiousness shared a positive relationship with future planning ($\beta = 0.23$, $p < .01$), which supports Hypothesis 1. Table 3 shows the results for the moderation analysis. The control variables were entered in Step 1 of the analysis, conscientiousness was entered in Step 2, future planning and GMA were added to the model in Step 3, and the interaction term between future planning and GMA was entered in Step 4. As shown in Step 3, the relationship between future planning and net worth was positive and significant ($\beta = 0.10$, $p < .01$). These results lend support to Hypothesis 2. The results also show that GMA shared a positive, significant relationship with net worth ($\beta = 0.13$, $p < .01$). The interaction between future planning and GMA was significant ($\beta = 0.11$, $p < .01$), which supports Hypothesis 3. To examine this interaction further, I graphed the interaction following the instructions given in Dawson (2014). Specifically, I plotted the relationship between the independent variable (future planning) and the dependent variable (net worth) at one standard deviation above and below the mean for the moderator (GMA). The pattern of the interaction as shown in Fig. 2 suggests that the relationship between future planning and net worth was stronger for those higher in GMA.

To examine the full model of conditional indirect effects I used the PROCESS macro for SPSS (Hayes, 2013, Version 3.0), which relies on a bootstrapping procedure to estimate conditional indirect effects and construct confidence intervals around the effect estimates. PROCESS not only allows researchers to generate boot-strapped estimates of model effects and confidence intervals surrounding those estimates, but also allows researchers to probe the interactions in a given model at various levels of the moderator variable. For this analysis I generated estimates of the indirect effects at the 10th, 25th, 50th, 75th, and 90th percentile of the GMA distribution in this dataset using 5,000 bootstrap samples and a confidence interval of 95%. As shown in Table 4, for future planning, when GMA was below the 50th percentile the confidence interval around the indirect effect estimate included zero. At the 50th percentile and above, the confidence intervals did not include zero. These results suggest that conscientiousness had positive, indirect effects on net worth through its relationship with future planning that was realized only for individuals higher in GMA. In contrast, conscientiousness had no indirect effect on net worth for those lower in GMA. Overall, these results support Hypothesis 4, suggesting that conscientiousness has a conditional indirect effect on net worth through its association with future planning that is moderated by GMA.

4. Discussion

This study makes several contributions to the understanding of how individual differences are associated with net worth. Conscientiousness has been shown to predict net worth, but the underlying psychological processes that connect them have not been empirically tested (Letkiewicz & Fox, 2014). This study extends existing work by explicitly examining whether future planning mediates the relationship between conscientiousness and net worth and may help explain how conscientiousness is related to net worth. By including GMA as a moderator, this study also considers the effect of "will do" and "can do" traits (Borman et al., 1991), identifying one of the boundary conditions that may limit the influence of conscientiousness on financial outcomes. This further contributes to the understanding of how noncognitive (personality) and cognitive (ability) traits affect such outcomes. Taken as a whole, this study offers an explanation for both *how* and *under what conditions* relatively stable individual traits influence net worth. These findings may be particularly important given efforts to design interventions—such as financial literacy training—that help improve individual financial outcomes by suggesting that such interventions may be dependent, at least partially, on distal, underlying psychological traits that predict (a) the extent to which people are likely to benefit from education or training interventions (GMA being the relevant trait here) and (b) the extent to which they are likely to put learning from such interventions into practice (conscientiousness being most relevant here). Recent research has raised the possibility that financial literacy is actually caused by a broader, underlying variable—namely, GMA (Hastings, Madrian, & Skimmyhorn, 2012). At a conceptual level financial literacy and GMA may be closely related. Indeed, an extensive review found that "…the many conceptual definitions of financial literacy fall into five categories: (1) knowledge of financial concepts, (2) ability to communicate about financial concepts, (3) aptitude in

managing personal finances, (4) skill in making appropriate financial decisions and (5) confidence in planning effectively for future financial needs" (Remund, 2010, p. 279). Thus, this research may speak to the potential efficacy of interventions that target individual financial behaviors.

This study brings with it several limitations. First, much of the study data was collected at a single point in time—the measure of GMA being the exception—which precludes inferences about causality. Second, it is possible that respondents answered the phone interview or self-report questionnaire in a socially desirable manner. If that is the case, then the results reported here may be biased in some way. In addition, the measures used in this study were developed by individuals from the MIDUS research team, raising the possibility that the measures are unique in a way that may limit the generalization of findings derived from those measures. It may also be the case that other Big Five personality traits not included in the current model influence individuals' net worth. For example, Hirsh (2015) suggested that individuals higher in extraversion were more likely "to prefer immediate gratification over delayed rewards" and thus engage in "more impulsive spending behaviors" (p. 163); data from three large samples supported this proposition. Future research might consider simultaneously the relationships between additional personality traits and net worth. The study focused on individual respondents, but many financial decisions—especially those for couples and families—are not always made by a sole individual. Thus, although I controlled for marital status in the analysis, the results may not generalize to all contexts. Future research might consider the traits and behaviors of family units. Relatedly, while the theoretical arguments presented in this study may help explain why personality is related to economic outcomes at the individual level, they may not fully account for the complexities of how personality traits are related to economic outcomes at a regional, national, or societal level. Theories of how personality is associated with broader operationalizations of economic outcomes may be of interest to future researchers.

References

Barrick, M. R., & Mount, M. K. (1991). The Big Five personality dimensions and job performance: A meta-analysis. *Personnel Psychology, 44*, 1–26.

Berneth, J. B., Taylor, S. G., Walker, H. J., & Whitman, D. S. (2012). An empirical investigation of dispositional antecedents and performance-related outcomes of credit scores. *Journal of Applied Psychology, 97*, 469–478.

Borman, W. C., White, L. A., Pulakos, E. D., & Oppler, S. H. (1991). Models of supervisory job performance ratings. *Journal of Applied Psychology, 76*, 863–872.

Dawson, J. F. (2014). Moderation in management research: What, why, when, and how. *Journal of Business Psychology, 29*, 1–19.

Goldberg, L. R. (1992). The development of markers for the Big-Five factor structure. *Psychological Assessment, 4*, 26–42.

Gottfredson, L. S. (1994). Mainstream science on intelligence: An editorial with 52 signatories, history, and bibliography. *Intelligence, 24*, 13–23.

Gottfredson, L. S. (1997). Why *g* matters: the complexity of everyday life. *Intelligence, 24*, 79–132.

Hastings, J. S., Madrian, B. C., & Skimmyhorn, W. L. (2012). Financial literacy, financial educations, and economic outcomes. Working paper 18412. National Bureau of Economic Research.

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach.* New York, NY: Guilford Press.

Hirsh, J. B. (2015). Extraverted populations have lower savings rates. *Personality and Individual Differences, 81*, 162–168.

Huang, J., L., Shaffer, J. A., Li, A., & King, R. A. (2019). General mental ability, conscientiousness, and the work-family interface: A test of mediating pathways. *Personnel Psychology, 72*, 291–321.

Hunter, J. E. (1986). Cognitve ability, cognitive aptitudes, job knowledge, and job performance. *Journal of Vocational Behavior, 29*, 340–362.

Howlett, E., Kees, J., & Kemp, E. (2008). The role of self-regulation, future orientation, and financial knowledge in long-term financial decisions. *The Journal of Consumer Affairs, 42*, 223–242.

Jacobs-Lawson, J. M., & Hershey, D. A. (2005). Influence of future time perspective, financial knowledge, and financial risk tolerance on retirement saving behaviors. *Financial Services Review, 14*, 331–344.

Joshanloo, M. (2018). Evaluating the factor structure of the MIDI personality scale using exploratory structural equation modeling. *Japanese Psycological Research, 60*, 162–169.

Judge, T. A., Higgins, C. A., Thoresen, C. J., & Barrick, M. R. (1999). The Big Five personality traits, general mental ability, and career success across the life span. *Personnel Psychology, 52*, 621–652.

Judge, T. A., Ilies, R., & Dimotakis, N. (2010). Are health and happiness the product of wisdom? The relationship of general mental ability to educational and occupational attainment, health, and well-being. *Journal of Applied Psychology, 95*, 454–468.

Lachman, M. E. (2005). Addendum for MIDI personality scales: MIDUS II version. Retrieved on December 12, 2019 from (https://www.brandeis.edu/psychology/lachman/pdfs/revised-midi-scales.pdf).

Lachman, M. E., Agrigoroaei, S., Tun, P. A., & Weaver, S. L. (2014). Monitoring cognitive functioning: Psychometric properties of the Brief Test of Adult Cognition by Telephone. *Assessment, 21*, 404–417.

Lachman, M. E., & Weaver, S. L. (1997). *The Midlife Development Inventory (MIDI) personality scales: Scale construction and scoring.* Brandeis University Technical Report.

Letkiewicz, J. C., & Fox, J. J. (2014). Conscientiousness, financial literacy, and asset accumulation of young adults. *The Journal of Consumer Affairs, 48*, 274–300.

Li, A., Shaffer, J. A., & Bagger, J. (2015). The psychological well-being of disability caregivers: Examining the roles of family strain, family-to-work conflict, and perceived supervisor support. *Journal of Occupational Health, 20*, 40–49.

Lusardi, A., Mitchell, O. S., & Curto, V. (2010). Financial literacy among the young. *The Journal of Consumer Affairs, 44*, 358–380.

Mayer, R. N., Zick, C. D., & Marsden, M. (2011). Does calculating retirement needs boost retirement savings. *The Journal of Consumer Affairs, 45*, 175–200.

McCrae, R. R., & Costa, P. T. (1987). Validation of the Five-Factor Model of personality across instruments and observers. *Journal of Personality and Social Psychology, 52*, 81–90.

McCrae, R. R., & Costa, P. T. (1999). The Five-Factor theory of personality. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.). *Handbook of personality* (pp. 159–181). New York: Guilford Press.

McCrae, R. R. (1993). Moderated analyses of longitudinal personality stability. *Journal of Personality and Social Psychology, 65*, 577–585.

Palczyńska, M., & Świst, K. (2018). Personality, cognitive skills and life outcomes: Evidence from the Polish follow-up study to PIAAC. *Large-scale Assessments in Education, 6*, 1–23.

Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate Behavioral Research, 42*, 185–227.

Prenda, K. M., & Lachman, M. E. (2001). Planning for the future: A life management strategy for increasing control and life satisfaction in adulthood. *Psychology and Aging, 16*, 206–216.

Remund, D. L. (2010). Financial literacy explained: The case for a clearer definition in an increasingly complex economy. *The Journal of Consumer Affairs, 44*, 276–295.

Ryff, Carol, Almeida, David M., Ayanian, John S., Carr, Deborah S., Cleary, Paul D., Coe, Christopher, et al. (2006). *Midlife development in the United States (MIDUS2), 2004-2006 [Computer file]. ICPSR04652-v1*Madison, WI: University of Wisconsin, Survey Center [producer] Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2007-03-22.

Saucier, G. (1994). Mini-Markers: A brief version of Goldberg's unipolar Big-Five markers. *Journal of Personality Assessment, 63*, 506–516.

Schmidt, F. L., Shaffer, J. A., & Oh, I. (2008). Increased accuracy for range restriction corrections: Implications for the role of personality and general mental ability in job and training performance. *Personnel Psychology, 61*, 827–868.

Stawski, R. S., Almeida, D. M., Lachman, M. E., Tun, P. A., & Rosnick, C. B. (2010). Fluid cognitive ability is associated with greater exposure and smaller reactions to daily stressors. *Psychology and Aging, 25*, 330–342.

Tun, P. A., & Lachman, M. E. (2006). Telephone assessment of cognitive function in adulthood: The Brief Test of Cognition by Telephone. *Age and Aging, 10*, 629–632.

Zimbardo, P. G., & Boyd, J. N. (1999). Putting time in perspective: A valid, reliable individual-differences metric. *Journal of Personality and Social Psychology, 77*, 1271–1288.