Relationships between Big Five and Academic and Workforce Outcomes

Numerous studies have shown relations between Big Five personality variables and achievement, both in workforce and academic contexts.

Openness

Workforce Findings

Openness has been connected to creativity in the workplace.[1] There may be an unknown connection between creativity and job performance.[2] For instance, the creative individual may unintentionally improve productivity through unique and innovative methods.

Openness to experience has also been positively related to successful training activities. The open individual's optimistic attitude toward and enjoyment of learning may positively impact the outcome of the training.[3]

Academic Findings

Openness has been shown to have a positive correlation with standardized measures of knowledge and achievement[4] and is modestly correlated with cognitive ability. Of the Big Five, it has the highest correlations with the SAT® verbal score (although, interestingly, not with math scores).[5] Openness has been positively associated with final grades, even when controlling for intelligence.[6] Openness also may facilitate the use of efficient learning strategies which, in turn, affects academic success.[7]

The correlation between Openness and academic achievement is not always found, however.[8] The creative and imaginative nature of open individuals may sometimes be a disadvantage in academic settings, particularly when individuals are required to reproduce curricular content rather than produce novel response or creative problem solving.[9]

Conscientiousness

Workforce Findings

Of the five main personality factors, Conscientiousness has been shown to be the most consistent, significant predictor of workplace performance.[10, 11, 12, 13, 14] For example, meta-analyses on the prediction of job performance from personality dimensions have demonstrated that broad measures of Conscientiousness predict overall job performance,[15, 16] even controlling for cognitive ability.[17, 18]

In addition to overall job performance, broad measures of Conscientiousness have been shown to predict a number of other valued workplace behaviors, such as organizational citizenship[19, 20] and leadership[21] as well as undesirable behaviors such as procrastination,[22] to name a few.

Conscientiousness is the best noncognitive predictor of performance across a wide variety of job types and work outcomes.

Academic Findings

Conscientiousness has consistently been found to predict academic achievement from preschool through high school,[23] the postsecondary level[24] and adulthood.[25, 26, 27] Conscientiousness measured in school children was found to predict academic achievement at age 20 and eventual academic attainment at age 30.[28] This factor predicts college grades even after controlling for high school grades and SAT scores,[29, 30] suggesting it may compensate for lower cognitive ability.[31]

High Conscientiousness may be associated with personal attributes necessary for learning and academic

pursuits such as being organized, dependable and efficient, striving for success and exercising self-control.[32] For example, in one study this factor was found to predict early completion of independent credit assignments, and signing up early to participate.[33] Conscientiousness might even affect achievement through its effect on the sleep schedule — high Conscientious individuals rise and retire earlier.[34]

The effects of Conscientiousness on academic performance may be mediated by motivational processes such as expenditure of effort, persistence, perceived intellectual ability,[35] effort regulation[36] and attendance.[37] There is some evidence that particular facets of Conscientiousness — achievement-striving, self-discipline, diligence, achievement via independence — may be particularly strong predictors of academic achievement, perhaps stronger than the broad Conscientiousness factor itself.[38, 39, 40]

Neuroticism
Workforce Findings

Those who exhibit neurotic behaviors tend to be less happy, which influences their ability to perform well in tasks.[41] Those who are neurotic tend to have low job satisfaction[42] and are more likely to remember and fixate on negative experiences within the workplace.[43, 44] These characteristics impact both feelings about a job and job performance.

The insecurity associated with Neuroticism can lead to quitting[45] and dissatisfaction with one's job.[46] This may be due to uncertainty about job performance[47] or one's ability to complete tasks.[48] Neuroticism is helpful, however, in jobs that require the formation of creative and novel ideas.[49]

Academic Findings

In early studies, Neuroticism was shown to predict poorer academic performance among school-aged children. For example, a study of 3,000 13-year-olds showed that emotional stability was related to academic success.[50] A longitudinal study of 205 participants who were assessed around ages 10, 20 and 30 demonstrated that negative emotionality at age 20 was correlated with poor adaptation concurrently and 10 years previously.[51]

Analysis suggests a correlation between Neuroticism and academic achievement, particularly for the anxiety and impulsiveness facets.[52, 53] This relationship may be due to Neuroticism's correlation with study attitudes.[54] However, some studies of both school children[55] and university students[56] have failed to find any significant correlations between Neuroticism and academic attainment. Such inconsistencies may reflect the role of moderating factors, such as self-control and motivation, in compensating for negative emotionality.

Extraversion
Workforce Findings

Extraverts tend to search for social relationships with co-workers, leading to increased relationships across their organization and a swift socialization and integration within the organization.[57, 58, 59] This process of assimilation is associated with positive performance[60] and a decreased likelihood of quitting.[61, 62, 63]

Extraversion has been positively correlated with occupations that require social interactions, training proficiency[64] and leadership abilities.[65] Extraversion has also been positively correlated with job satisfaction[66] and leadership abilities.[67] Extraverts may experience high levels of satisfaction in the workplace due to their ability to experience optimal levels of stimulation in the social environment;[68] introverts often report less satisfaction for these very reasons.[69]

Academic Findings

In general, there does not seem to be a relationship between Extraversion and college performance,[70, 71] although some studies have found evidence for a small, negative correlation.[72] Age may moderate the effect of Extraversion on academic success. Before the age of 11–12, extraverted children outperform introverted children;[73] among adolescents and adults some research has shown that introverts show higher achievement than extraverts.[74] This change in the direction of the correlation has been attributed to the move from the sociable, less competitive atmosphere of primary school to the rather formal atmospheres of secondary school and higher education, in which introverted behaviors such as avoidance of intensive socializing become advantageous.

Extraverts and introverts also differ in parameters of information-processing such as speech production, attention and reflective problem-solving,[75] with performance varying along meaningful dimensions. For example, extraverts have been shown to be better at oral contributions to seminars but poorer at essay-writing than introverts.[76]

Agreeableness

Workforce Findings

The ability to adapt enables agreeable individuals to establish and maintain healthy and rewarding relationships with their co-workers, colleagues and place of business.[77] The qualities associated with agreeableness — kindness, likeability, thoughtfulness — tend to lead to these successful relationships with co-workers[78, 79] and encourage the agreeable individual to remain within the organization.[80] The worker's positive opinion about the environment increases performance[81] as well as motivation to stay at the job.[82]

Agreeable people may often be high-performing individuals due to their willingness to adapt to and understand their environment.[83] Agreeableness has been shown to predict performance in interpersonal-oriented jobs,[84] as well as a significant (albeit weak) predictor of helping others.[85]

Unlike some personality constructs such as Conscientiousness, Agreeableness is not associated with workforce success for all occupations, as certain occupations require a certain degree of disagreeableness for success.[86] Likewise, Agreeableness has been negatively correlated with leadership abilities, while it is positively correlated with working with a team.[87]

Academic Findings

Although the temperamental precursors of Agreeableness, such as prosocial orientation, relate to better social adjustment, relations between this factor and academic attainment are consistently nonsignificant.[88, 89, 90, 91] However, antisocial personality traits associated with low Agreeableness may have detrimental effects.

Other factors that impact academic achievement

In addition, several unclassified factors may be particularly relevant to educational outcomes.

Time Management

Workforce Findings: Some research has shown that time management behaviors have an impact on well-being at work. For example, one study found that car sales people who used short-range planning tended to have higher job performance scores.[92] In terms of time management training, some studies[93, 94, 95] have shown a positive relationship with work performance, while others have not.[96, 97]

Academic Findings: Poor time management, such as not allocating time properly for work assignments, cramming for exams and failing to meet deadlines, has been found to be a source of stress and poor academic performance.[98, 99, 100] Several studies report correlations between time management and academic achievement in college students.[101, 102]

Additionally, time management behavior has been linked to perceived control of time[103, 104, 105, 106, 107] and perceived control of time has been associated with well-being in the workplace.[108, 109, 110, 111, 112] Numerous researchers have found that perceived control of time significantly predicts job satisfaction and well-being.[113, 114, 115, 116, 117] In terms of performance, however, only weak and zero correlations have been found.[118, 119, 120, 121]

Anxiety

Anxiety is a robust and well-established facet of Neuroticism.[122, 123, 124]

Workforce Findings: Perkins and Corr (2005)[125] have postulated that the propensity to worry in the workplace might enhance workplace performance. After testing a sample of financial service managers, they learned this theory was partially true, with worrying positively correlating with managerial performance, but only for those managers with high cognitive abilities.

Test anxiety also plays a role in workforce contexts through the prevalence of testing batteries in selection.

To the extent that hiring decisions are made based on test results, test anxiety may influence these results.

Academic Findings: Test anxiety is the negative affect, worry, physiological arousal and behavioral responses that accompany concern about failure or lack of competence on an exam or similar evaluative situations.[126] Research has found that test anxiety has a detrimental effect on academic performance.[127, 128] Analyses have shown a consistent and moderate negative relationship between test anxiety and academic performance.[129, 130, 131] Recent studies with community- and four-year college students have shown similar results.[132] Almost a third of American primary and secondary students may be affected by test anxiety.[133]

Self-Efficacy

Workforce Findings: Research in the area of self-efficacy and workplace success has focused in two areas: job satisfaction and job performance. In terms of job satisfaction, self-efficacy has been theorized to be an important component of satisfaction merely due to its practical association with success on the job.[134] Those employees with high self-efficacy are more likely to effectively deal with the complexities of the workplace and persist through these complications and difficulties.[135] Because of their persistence, those with high self-efficacy are more likely to value their job and feel job satisfaction.[136]

Academic Findings: Self-efficacy was shown to be a moderate correlate of Neuroticism and Extroversion.[137] Many studies have examined the relation between self-efficacy and academic outcomes. Students with a high sense of academic self-efficacy were found to demonstrate greater persistence and effort in their academic learning.[138] Students with low academic self-efficacy were more prone to becoming discouraged by challenging tasks. Besides persistence and effort, high self-efficacy may be related to the use of cognitive strategies when encountering difficult and demanding problems.

Less work has been conducted in the area of job performance. Researchers have suggested that task-specific self-efficacy is related to job performance.[139, 140] A meta-analysis of the few studies in this area reported a positive correlation between generalized self-efficacy and job performance.[141]

Footnotes

1 George, J. M. & Zhou, J. (2001). Understanding when bad moods foster creativity and good ones don't: The role of context and clarity of feelings. *Journal of Applied Psychology*, 87, 687–697.

2 Mkoji, D. & Sikalieh, D. (2012). The five-factor model of personality in the workplace. Retrieved from **http://www.personalityresearch.org/papers/neubert.html**.

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

4 Ackerman, P. L. & Heggestad, E. D. (1997). Intelligence, personality, and interests: Evidence for overlapping traits. *Psychological Bulletin, 121*, 219–245.

5 Noftle, E. E. & Robins, R. (2007). Personality predictors of academic outcomes: Big Five correlates of GPA and SAT scores. *Journal of Personality and Social Psychology, 93*, 116–130.

6 Farsides, T., & Woodfield, R. (2003). Individual differences and undergraduate academic success: The roles of personality, intelligence, and application. *Personality and Individual Differences, 34*, 1225–1243.

7 Mumford, M. D., & Gustafson, S. B. (1988).Creativity syndrome: Integration, application, and innovation. Psychological Bulle*tin, 103*, 27–43. [doi: 10.1037/0033-2909.103.1.27]

8 Busato, V. V., Prins, F. J., Elshout, J. J., & Hamaker, C. (2000). Intellectual ability, learning style, personality, achievement motivation and academic success of psychology students in higher education. *Personality and Individual Differences, 29*, 1057–1068.

9 De Fruyt, F. & Mervielde, I. (1996). Personality and interests as predictors of educational streaming and achievement. *European Journal of Personality, 10*, 405–425.

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

11 Behling, O. (1998). Employee selection: will intelligence and conscientiousness do the job? *Academy of Management Executive, 12*, 77–86.

12 Dudley, N. M., Orvis, K. A., Lebiecki, J. E., & Cortina, J. M. (2006). A meta-analytic investigation of Conscientiousness in the prediction of job performance: Examining the intercorrelations and the incremental validity of narrow traits. *Journal of Applied Psychology, 91*, 40–57.

13 Hogan, J. & Holland, B. (2003). Using theory to evaluate personality and job-performance relations: A socioanalytic perspective. *Journal of Applied Psychology, 88*, 100–112.

14 Hurtz, G. M. & Donovan, J. J. (2000). Personality and job performance: The Big Five revisited. *Journal of Applied Psychology, 85*, 869–879.

15 Barrick, M. R., Mount, M. K., & Judge, T. A. (2001). Personality and performance at the beginning of the new millennium: What do we know and where do we go next? *International Journal of Selection and Assessment, 9*, 9–30.

16 Hurtz, G. M. & Donovan, J. J. (2000). Personality and job performance: The Big Five revisited. Journal of *Applied Psychology, 85*, 869–879.

17 Hough, L. M., & Oswald, F. L. (2008). Personality testing and industrial-organizational psychology: Reflections, progress, and prospects. *Industrial and Organizational Psychology, 1*, 272–290.

18 Schmidt, F. L., & Hunter, J. E. (1998). The validity and utility of selection methods in personnel psychology: Practical and theoretical implications of 85 years of research findings. *Psychological Bulletin, 124,* 262–274. [doi: 10.1037/0033-2909.124.2.262]

19 Borman, W. C., Penner, L. A., Allen, T. D., & Motowidlo, S. J. (2001). Personality predictors of citizenship performance. *International Journal of Selection and Assessment, 9*, 52–69.

20 Sackett, P. R., Berry, C. M., Wiemann, S. A., & Laczo, R. J. (2006). Citizenship and counterproductive behavior: Clarifying relations between the two domains. *Human Performance, 19*, 441–464.

21 Judge, T. A., Heller, D., & Mount, M. K. (2002). Five-factor model of personality and job satisfaction: A meta-analysis. *Journal of Applied Psychology, 87,* 530–541.

22 Judge, T. A. & Ilies, R. (2002). Relationship of personality to performance motivation: A meta-analytic review. *Journal of Applied Psychology, 87,* 797–807.

23 Noftle & Robins (2007). Personality predictors of academic outcomes: Big five correlates of GPA and SAT scores. *Journal of Personality and Social Psychology, 93,* 116–130.

24 O'Connor, M. C. & Paunonen, S. V. (2007). Big Five personality predictors of post-secondary academic performance. *Personality and Individual Differences, 43,* 971–990.

25 Ackerman & Heggestad (1997). Intelligence, personality, and interests: Evidence for overlapping traits. *Psychological Bulletin, 121,* 219–245.

26 De Fruyt & Mervielde (1996). Personality and interests as predictors of educational streaming and achievement. *European Journal of Personality, 10,* 405–425.

27 Shiner, R. L., Masten, A. S., & Roberts, J. M. (2003). Childhood personality foreshadows adult personality and life outcomes two decades later. *Journal of Personality, 71,* 1145–1170.

28 Shiner, R. L., & Masten, A. S. (2002). Transactional links between personality and adaptation from childhood through adulthood. *Journal of Research in Personality, 36,* 580–588.

29 Conard, M. A. (2006). Aptitude is not enough: How personality and behavior predict academic performance. *Journal of Research in Personality, 40,* 339–346.

30 Noftle & Robins (2007). Personality predictors of academic outcomes: Big five correlates of GPA and SAT scores. *Journal of Personality and Social Psychology, 93,* 116–130.

31 Chamorro-Premuzic, T., & Furnham, A. (2003). Personality predicts academic performance: evidence from two longitudinal university samples. *Journal of Research in Personality, 17,* 237–250.

32 Matthews, G., & Deary, I. J. (1998). *Personality traits.* Cambridge: Cambridge University Press.

33 Dollinger, S. J., & Orf, L. A. (1991). Personality and performance in "personality": Conscientiousness and openness to experience. *Journal of Research in Personality, 25,* 276284.

34 Gray, E. K., & Watson, D. (2002). General and specific traits of personality and their relationship to sleep performance. *Journal of Personality, 70,* 177-206.

35 Boekaerts, M. (1996). Self-regulated learning and the junction of cognition and motivation. *European Psychologist, 1,* 100–112.

36 Bidjerano, T., & Dai, D. (2007). The relationship between the big-five model of personality and self-regulated learning strategies. *Learning and Individual Differences, 17,* 69–81.

37 Conard (2006).

38 Kuncel, N., Hezlett, S.A., Ones, D. S., Crede, M., Vannelli, J. R., Thomas, L. L., Duehr, E. E., & Jackson, H. L. (2005). *A Meta-Analysis of Personality Determinants of College Student Performance.* 20th Annual Meeting of the Society of Industrial-Organizational Psychology, Los Angeles, CA.

39 Noftle & Robins (2007). Personality predictors of academic outcomes: Big five correlates of GPA and SAT scores. *Journal of Personality and Social Psychology, 93,* 116–130.

40 O'Connor, M. C. & Paunonen, S. V. (2007). Big Five personality predictors of post-secondary academic performance. *Personality and Individual Differences, 43,* 971–990.

41 Colquitt, J., LePine, J., & Wesson, M. (2009). *Organizational behavior: Essentials for improving performance and commitment.* New York: McGraw-Hill.

42 Colquitt, et al. (2009).

43 Watson, D. & Clark, L. A. (1984). Negative affectivity: The disposition to experience aversive emotional states. *Psychological Bulletin, 96,* 465–490.

44 Weiss, H. M. & Cropanzano, R. (1996). Affective events theory: A theoretical discussion of the structure, causes and consequences of affective experiences at work. *Research in Organizational Behavior, 18,* 1–74.

45 Mkoji, D. & Sikalieh, D. (2012). The five-factor model of personality in the workplace. Retrieved from **http://www.personalityresearch.org/papers/neubert.html**.

46 Judge, T. A., Heller, D., & Mount, M. K. (2002). Five-factor model of personality and job satisfaction: A meta-analysis. *Journal of Applied Psychology, 87,* 530–541.

47 Mkoji & Sikalieh (2012).

48 Judge, T. A. & Hies, R. (2002). Relationship of personality to performance motivation: A meta-analytic review. *Journal of Applied Psychology, 87,* 797–807.

49 Colquitt, et al. (2009).

50 Entwistle, N. J., & Cunningham , S. (1968). Neuroticism and school attainment: A linear relationship? *British Journal of Educational Psychology, 38(2),* 123–132.

51 Shiner, R. L., & Masten, A. S. (2002). Transactional links between personality and adaptation from childhood through adulthood. *Journal of Research in Personality, 36,* 580–588.

52 Kuncel, N., Hezlett, S.A., Ones, D. S., Crede, M., Vannelli, J. R., Thomas, L. L., Duehr, E. E., & Jackson, H. L. (2005). *A Meta-Analysis of Personality Determinants of College Student Performance.* 20th Annual Meeting of the Society of Industrial-Organizational Psychology, Los Angeles, CA.

53 O'Connor, M. C. & Paunonen, S. V. (2007). Big Five personality predictors of post-secondary academic performance. *Personality and Individual Differences, 43,* 971–990.

54 Crede, M., & Kuncel, N. R. (2008). Study habits, skills, and attitudes: The third pillar supporting collegiate academic performance. *Perspectives on Psychological Science, 3,* 425–454.

55 Heaven, P. C. L., Mak, A., Barry, J., & Ciarrochi, J. (2002). Personality and family influences on adolescent attitudes to school and self-related academic performance. *Personality and Individual Differences, 32,* 453–462.

56 Busato, V. V., Prins, F. J., Elshout, J. J., & Hamaker, C. (2000). Intellectual ability, learning style, personality, achievement motivation and academic success of psychology students in higher education. *Personality and Individual Differences, 29,* 1057–1068.

57 Louis, M. R. (1980). Surprise and sense making: What newcomers experience in entering unfamiliar organizational settings. *Administrative Science Quarterly, 25,* 226–251.

58 Louis, M. R., Posner, B. Z., & Powell, G. N. (1983). The availability and helpfulness of socialization practices. *Personnel Psychology, 36,* 857–866.

59 McCrae, R. R. & Costa, P. T., Jr. (1991). Adding Biebe und Arbert: The full Five-Factor model and well-being. *Personality and Social Psychology Bulletin, 17,* 227–232.

60 Mkoji & Sikalieh (2012).

61 Colquitt, J., LePine, J., & Wesson, M. (2009). Organizational behavior: *Essentials for improving performance and commitment.* New York: McGraw-Hill.

62 Maertz, C. P. & Campion, M. C. (2004). Profiles in quitting: Integrating process and content turnover theory. *Academy of Management Journal, 47,* 566–582.

63 O'Reilly, C. A., Caldwell, D. F., & Barnett, W. P. (1989). Work group demography, social integration, and turnover. *Administrative Science Quarterly, 34,* 21–37.

64 Barrick & Mount (1991).

65 Lim, B. & Ployhart, R. E. (2004). Transformational leadership: Relations to the five-factor model and team performance in typical and maximum contexts. *Journal of Applied Psychology, 89*, 610–621.

66 Judge, T. A., Heller, D., & Mount, M. K. (2002). Five-factor model of personality and job satisfaction: A meta-analysis. *Journal of Applied Psychology, 87*, 530–541.

67 Lim & Ployhart (2004).

68 Judge, T. A., Martocchio, J. J., & Thoresen, C. J. (1997). Five-factor model of personality and employee absence. *Journal of Applied Psychology, 82*, 745–755.

69 Neubert, S. P. (2004). The five-factor model of personality in the workplace. Retrieved from **http://www.personalityresearch.org/papers/ neubert.html**.

70 Kuncel, et al. (2005).

71 Noftle E. & Robins R. (2007). Personality predictors of academic outcomes: Big Five correlates of GPA and SAT scores. *Journal of Personality and Social Psychology, 93*, 116–130.

72 O'Conner & Paunonen (2007).

73 Entwistle, N. J., & Entwistle, D. (1970). The relationship between personality, study methods, and academic performance. *British Journal of Educational Psychology, 40*, 132–143.

74 Furnham, A., & Chamorro-Premuzic, T. (2004). Personality and intelligence as predictors of statistics examination grades. *Personality and Individual Differences, 37*, 943–955.

75 Zeidner, M. & Matthews, G (2000). Intelligence and personality. In R. Sternberg (Ed.), *Handbook of intelligence*, 581–610. New York, NY, US: Cambridge University Press.

76 Furnham, A. & Medhurst, S. (1995). Personality correlates of academic seminar behavior: A study of four instruments. *Personality and Individual Differences, 19*, 197–220.

77 Organ, D. W. & Lingl, A. (1995). Personality, satisfaction, and organizational citizenship behavior. *Journal of Social Psychology, 135 (3)*, 339–350.

78 McCrae & Costa (1991).

79 Organ & Lingl (1995).

80 Colquitt, et al. (2009).

81 Mkoji & Sikalieh (2012).

82 Meyer, J. P., & Allen, N. J. (1991). A three-component conceptualization of organizational commitment. *Human Resource Management Review, 1*, 61–89.

83 Mkoji & Sikalieh (2012).

84 Hurtz, G. M., & Donovan, J. J. (2000). Personality and job performance: The Big Five revisited. *Journal of Applied Psychology, 85*, 869–879.

85 Organ, D. W., & Ryan, K. (1995). A meta-analytic review of attitudinal and dispositional predictors of organizational citizenship behavior. *Personnel Psychology, 48*, 775–803. As cited in King, E. B., George, J. M., & Hebl, M. R. (2005). Linking personality to helping behaviors at work: An interactional perspective. *Journal of Personality, 73 (3)*, 585–608.

86 Mkoji & Sikalieh (2012).

87 Neubert (2004).

88 Kuncel, et al. (2005).

89 Noftle & Robins (2007).

90 O'Conner & Paunonen (2007).

91 Shiner, R. L., Masten, A. S., & Roberts, J. M. (2003). Childhood personality foreshadows adult personality and life outcomes two decades later. *Journal of Personality, 71*, 1145–1170.

92 Barling, J., Kellaway, E. K., & Cheung, D. (1996). Time management and achievement striving interact to predict car sale performance. *Journal of Applied Psychology, 81*, 821–826.

93 Hall, B. L., & Hursch, D. E. (1982). An evaluation of the effects of a time management training program on work efficiency. *Journal of Organizational Behavior Management, 3*, 73–96.

94 King, A. C., Winett, R. A., & Lovett, S. B. (1986). Enhancing coping behaviors in at-risk populations: The effects of time-management instruction and social support in women from dual-earner families. *Behavior, Therapy, 17*, 57–66.

95 Orpen, C. (1994). The effect of time-management training on employee attitudes and behavior: A field experiment. *Journal of Psychology, 128*, 393–396.

96 Macan, T. H. (1996). Time-management training: Effects on time behaviors, attitudes, and job performance. *Journal of Psychology, 130*, 229–236.

97 Slaven, G., & Totterdell, P. (1993). Time management training: Does it transfer to the workplace? *Journal of Managerial Psychology, 8 (1)*, 20–28.

98 Gall, M. D. (1988). Making the grade. Rocklin, CA: Prima.

99 Longman, D. G. & Atkinson, R. H. (2004). CLASS: College Learning and Study Skills. (7th ed.). Wadsworth Publishing.

100 Macan, T. H., Shahani, C., Dipboye, R. L., & Phillips, A. P. (1990). College students' time management: Correlations with academic performance and stress. *Journal of Educational Psychology, 82*, 760–768.

101 Britton, B. K., & Tesser, A. (1991). Effects of time-management practices on college grades. *Journal of Educational Psychology, 83*, 405–410.

102 Macan, T. H., Shahani, C., Dipboye, R. L., & Phillips, A. P. (1990). College students' time management: Correlations with academic performance and stress. *Journal of Educational Psychology, 82*, 760–768.

103 Jex, S. M., & Elacqua, T. C. (1999). Time management as a moderator of relations between stressors and employee strain. *Work & Stress, 13*, 182–191.

104 Macan, T. H. (1994). Time management: Test of a process model. *Journal of Applied Psychology, 79*, 381–391.

105 Nonis, S. A., & Sager, J. K. (2003). Coping strategy profiles used by salespeople: Their relationships with personal characteristics and work outcomes. *Journal of Personal Selling & Sales Management, 23*, 139–150.

106 Pinneker, L., Hafner, A., Stock, A., & Oberst, V. L. (2009, May). How to get control of your time. Poster session presented at the 14th European Congress of Work and Organizational Psychology, Santiago de Compostela, Spain.

107 Hafner, A., & Stock, A. (2010). Time management training and perceived control of time at work. *The Journal of Psychology, 144 (5)*, 429–447.

108 Adams, G. A., & Jex, S. M. (1999). Relationships between time management, control, work-family conflict and strain. *Journal of Occupational Health Psychology, 4*, 72–77.

109 Claessens, B. J. C., Van Eerde, W., Rutte, C. G., & Roe, R. A. (2004). Planning behavior and perceived control of time at work. *Journal of Organizational Behavior, 25*, 937–950.

110 Macan (1994).

111 Macan, et al. (1990).

112 Schwable, S., Hafner, A., Stock, A., & Hartmann, J. (2009, May). Perceived control of time as an important factor concerning well-being but not performance. Poster session presented at the 14th European Congress of Work and Organizational Psychology, Santiago de Compostela, Spain.

113 Adams & Jex (1999).

114 Claessens, et al. (2004).

115 Macan (1994).

116 Macan, et al. (1990).

117 Schwable, et al. (2009).

118 Claessens, et al. (2004).

119 Macan (1994).

120 Macan, et al. (1990).

121 Schwable et al. (2009) as cited in Hafner, A., & Stock, A. (2010). Time management training and perceived control of time at work. *The Journal of Psychology, 144 (5)*, 429–447.

122 McCrae, R. R., & Costa, P. T. (1994). The stability of personality: Observations and evaluations. *American Psychological Society, 3(6)*, 173–175.

123 McCrae, R. R., & Costa, P. T., Jr. (1999). A five-factor theory of personality. In L. A. Pervin & O. P. John (Eds.), Handbook of personality: *Theory and research, 2nd ed.*, 139–153. New York: Guilford Press.

124 Schulze, R., & Roberts, R. D. (2006). Assessing the Big-Five: Development and Validation of the Openness Conscientiousness Extraversion Agreeableness Neuroticism Index Condensed (OCEANIC). *Zeitschrift für Psychologie, 214*, 133–149.

125 Perkins, A. M., & Corr, P. J. (2005). Can worriers be winners? The association between worrying and job performance. *Personality and Individual Differences, 38*, 25–31.

126 Zeidner, M. (1998). *Test anxiety: The state of the art*. New York: Plenum.

127 Chappell, M. S., Blanding, B. Z., Silverstein, M. E., Takahashi, M., Newman, B., Gubi, A., & McCann, N. (2005). Test anxiety and academic performance in undergraduate and graduate students. *Journal of Educational Psychology, 97*, 268–274.

128 Keough, E., Bond, F. W., French, C. C., Richards, A. & Davis, R. E. (2004). Test anxiety: Susceptibility to distraction and examination performance. *Anxiety, Stress, & Coping: An International Journal, 17*, 241–252.

129 Hembree, R. (1988). Correlates, causes, effects, and treatment of test anxiety. *Review of Educational Research, 58*, 7–77.

130 Seipp, B. (1991). Anxiety and academic performance: A meta-analysis of findings. *Anxiety Research, 4*, 27–41.

131 Zeidner, M. (1998).

132 Roberts, R. D., Schulze, R., & MacCann, C. (2007). Student 360TM: A valid medium for noncognitive assessment? Paper presented at the annual meeting of the American Educational Research Association and the National Council on Measurement in Education. Chicago, IL.

133 Lufi, D., Okasha, S., & Cohen, A. (2004). Test anxiety and its effects on the personality of students with learning disabilities. *Learning Disability Quarterly, June*, 176–184.

134 Judge, T. A., Locke, E. A., & Durham, C. C. (1997). The dispositional causes of job satisfaction: A core evaluations approach. *Research in Organizational Behavior, 19*, 151–188.

135 Gist, M. E. & Mitchell, T. R. (1992). Self-efficacy: A theoretical analysis of its determinants and malleability. *Academy of Management Review, 17*, 183–211.

136 Gist & Mitchell (1992) as cited in Judge, T. A. & Bono, J. E. (2001). Relationship of core self-evaluations trait — 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 (1)*, 80–92.

137 Judge, T. A., & Ilies, R. (2002). Relationship of personality to performance motivation: A meta-analytic review. *Journal of Applied Psychology, 87*, 797–807.

138 Schunk, D. H. (1989). Social cognitive theory and self-regulated learning. In B. J. Zimmerman & D. H. Schunk (Eds.), Self-regulated learning and academic achievement: *Theory, research, and practice*. New York: Springer Verlag.

139 Hysong, S. J. & Quinones, M. A. (1997, April). The relationship between self-efficacy and performance: A meta-analysis. Paper presentation at the 12th Annual Conference of the Society of Industrial and Organizational Psychology, St. Louis, Mo.

140 Stajkovic, A. D. & Luthans, F. (1998). Self-efficacy and work related performance: A meta-analysis. *Psychological Bulletin, 124*, 240–261.

141 Judge, T. A. & Bono, J. E. (2001). Relationship of core self-evaluations trait — 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 (1)*, 80–92.

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