

PREDICTORS OF SUCCESS IN COLLEGE AND CAREER: EFFECTS OF PERSONALITY,
MOTIVATION AND DRIVE

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ABSTRACT

Research examining success in college and career suggests that success in college, when measured by GPA, may not be a strong predictor of success in work, including salary and career satisfaction. This study examined how individual person variables, such as personality, motivation and drive, may better the predictive value of GPA. Predictors of college success, extrinsic career success and intrinsic career success as measured by GPA, salary and job satisfaction, respectively, were examined. Three models were developed and analyzed using structural equation modeling. In the models, demographic variables, personality, work motivation and work drive were assessed. Participants included 64 male and female undergraduate participants from a small private university and 107 male and female graduates of the same university. Those with higher GPAs tended to be female and to show more Conscientiousness, work motivation and work drive. Higher salaries were associated with being male, having obtained a higher educational degree and being less neurotic. Higher career satisfaction was associated with being male, White, having obtained a higher educational degree, having a higher undergraduate GPA, being less neurotic and less open. Results highlight the incongruencies between the personal attributes that tend to be associated with success at school and those that tend to be associated with work.

CHAPTER 1

INTRODUCTION AND LITERATURE REVIEW

Understanding the variables that relate to success at college and work is central to developing policies for both types of institutions. Policies central to college and work include those relating to selection and success criteria. Often, the selection criteria used by colleges and work places are similar. In both institutions, selection criteria tend to center upon measures of previous achievement. At college, student selection is often based upon measures of high school grades and standardized college entrance exam scores, while at work, employee selection is often based upon college grades or, more subjectively, on measures of past work achievement. Differences may arise between the institutions, however, when the criteria necessary for the achievement of success is considered. To explain, one of the main purposes of college is to gain the education and skills necessary to succeed as part of the work force. If the measurements of success criteria for school and work differ, it may be hard to predict which students might be successful in the work place. Hiring new graduates, then, becomes more of a hit and miss endeavor.

One way to determine whether or not successful students will develop into successful workers is to examine the traits and variables that tend to be associated with successful individuals at both college and work. Hopefully, successful students will embody some of the same traits that successful workers do, so that their success should transfer into the work environment. If these traits differ, however, one may hypothesize that the student's success in school may not transfer to the workplace.

The purpose of this study was to begin to examine the transferability of success from college to work. Two questions were addressed. First, what are some of the individual attributes that tend to predict success in college and at work as measured by GPA, salary and career satisfaction? Second, do the traits that tend to predict success in school also predict success at work? Current literature examining the predictors of success in these areas is limited and indicates that further research is necessary in order to more fully understand how personal attributes affect success.

The following literature review begins by examining the definition of success at both college and work. Then it examines the factors, traits and variables that tend to predict success in these endeavors.

Collegiate Success

For many individuals, college is the first step on a path towards employment. As such, it seems logical to suspect that the level of success experienced at college should foretell, to some extent, that which would be experienced at work. If, in fact, success is not transient then there may be a need to consider the potential for change regarding the way in which colleges and universities identify successful students. Such an investigation might begin by determining the definitions of success most commonly used by colleges and universities and follow up with an examination of the factors, variables and traits that tend to relate. A review of the available literature concerning each of these matters follows below.

Measures of Collegiate Success

The traditional measure of scholastic success is grades. Researchers interested in academics have tended to study success by measuring grades using one or more of the

following methods: by taking the grade in a single course (Lounsbury, Sundstrom, Loveland & Gibson, 2003; Ridgell & Lounsbury, 2004), averaging grades across a group of courses (Brashears & Baker, 2003; Farsides & Woodfield, 2003) or by calculating a cumulative grade point average (GPA) (Betts & Morell, 1999; Brashears & Baker, 2003; Farsides & Woodfield, 2003; Ridgell & Lounsbury, 2004; Wolfe & Johnson, 1995; Zheng, Saunders, Shelley & Whalen, 2002).

While most often used to assess collegiate success, grades are not the only available measure; graduation, career success and acceptance into graduate school are often cited as alternatives in literature reviews (Lavin, 1965; Marascuilo & Gill, 1967; Mouw & Khanna, 1993). Indeed, some researchers posit that grades may not be the most definitive measure of collegiate success and consider graduation to be a better determinant of scholastic success (Brashears & Baker, 2003; Lavin, 1965; Marascuilo & Gill, 1967). After all, it signifies one's attainment of certain educational requirements and separates those who have met them from those who have not. Following that philosophy, Marascuilo and Gill (1967) chose graduation as the sole measure of academic success in their study examining the predictors of doctoral students' academic success. The utility of Marascuilo and Gill's philosophy, however, is arguably restricted to the doctoral population. Those who earn a doctoral degree are objectively quite successful, regardless of their GPA, simply due to the fact that less than 2% of the total population attain such a degree. The same does not hold true for undergraduate degrees. According to the 2000 census, almost 16% of the U.S. population has attained such a degree, thus making those degrees more common and hence, less discriminative of

success (available at

<http://www.census.gov/population/socdemo/education/cps2004/tab01-01.xls>).

Predictors of Collegiate Success

Researchers who have examined successful students have discovered a number of variables that tend to predict success in college, particularly when success is measured using GPA. Predictors that have been found to differentiate between successful and unsuccessful students include previous achievement, college admission test scores, general intelligence, personality traits, goals and a variety of personal demographic data.

Previous Achievement

A student's record of previous achievement at the high school level may be one of the best-known predictors of success at college. Previous achievement in this population is most often measured using the student's high school GPA or class percentile rank.

Studies examining the predictive validity of previous achievement for later academic success tend to find moderate to strong relationships. One meta-analysis of 109 studies indicates that high school GPA moderately relates to college GPA ($r = .41$) (Robbins et al., 2004). A stronger relationship was found, however, in a study of 204 undergraduate students at a private west coast university, when, in examining the relationship between high school and first-year college GPA, DeBerard, Spielmans and Julka (2004) found a correlation of $.67$ ($p < .05$). More moderate correlations were found in a study of comparable size by Wolfe and Johnson (1995) at a small western New York college ($r = .40$), while Brasher and Baker (2003) found similar results in their smaller study of 67 students majoring in agricultural sciences. When the latter researchers substituted high school percentage rank for high school GPA, the strength of

the relationship with college GPA increased markedly, revealing a strong relationship. Brasher and Baker's results are supported in the literature by a much larger study by House in 1994. In his study of 7,377 students, House found moderate correlations, across all four years of college, between high school class percentile rank and college GPA ($r = .46$ to $.48$, $p < .05$).

These relationships between high school achievement and college GPA may be translated into practical meanings. Betts and Morell (1999), for example, found that a one-point increase in high school GPA tended to predict a corresponding increase of .53 points in college GPA.

Multiple regression analyses have added to our knowledge about the relative strength of high school achievement measures as compared to other collegiate success predictors. In fact, studies using multiple regression analyses have revealed that measures of high school achievement, including GPA, class and percentile rank are the strongest known predictors of post secondary academic success. When high school GPA was added to multiple regression analyses with select background, attitudinal and environmental factors in one large study of 1,166 undergraduate students enrolled in a Midwestern university, researchers (Zheng et al., 2002) found that they could explain a significantly larger percentage of the variance in college student's GPAs. In fact, when GPA was added to the equation it boosted the explanatory power of the researchers' models anywhere from 16.1 to 28.5 percentage points. High school GPA was also the strongest predictor in each of Wolfe and Johnson's (1995) five explanatory models, adding more predictive power than traits, entrance exam scores or measures of application. Brashear and Baker (2003) found that the predictive strength of high school

GPA was only surpassed by high school percentage rank, possibly alluding to a superior ability of the latter's discriminatory ability.

Entrance Exam Scores

Entrance exam scores are the next measure used for student selection by colleges and university admissions offices (Cambiano, Denny & De Vore, 2000; Murray & Garcia, 1998; Organ, 2001; Willingham, Lewis, Morgan & Ramist, 1990). Popular entrance exams include the Scholastic Aptitude Test (SAT) and the American College Test (ACT). Both exams purport to measure the educational skills that students have developed over time and need to be successful. The SAT, according to its developer, The College Board, assesses critical reading, mathematical reasoning and writing (<http://www.collegeboard.com/highered/ra/index.html>). The areas assessed by the ACT, according to ACT Inc., include English, mathematics, reading and science. An optional writing section is also available to measure students' English writing skills (<http://www.act.org/aap/infosys/index.html>).

Colleges and universities often evaluate SAT or ACT scores as part of the admissions process when seeking to admit qualified students. Studies, in fact, have discovered moderate relationships between both entrance exams and college grades. When examining the relationship between the SAT and first year college grades from 685 institutions during a 15-year period from 1970 to 1985, researchers found correlations ranging from .37 to .44 (Willingham et al., 1990). More recent analyses lend support, but provide conflicting information regarding the strength of the relationship. One study of 46,000 students at 45 colleges, for example, reports a correlation of .58 (Murray & Garcia, 1998), while a smaller study of 204 students at a private university suggests a

correlation of .30 ($p < .05$) (DeBerard et al., 2004). Somewhat more moderate results have been found when considering the predictive validity of the ACT, with correlations ranging from .27 to .33 between that exam and first year grades (Brashears & Baker, 2003). A meta-analysis of the available literature found that the SAT and ACT, combined, correlated with college GPA at the .37 level (Robbins et al., 2004).

Those who oppose the use of entrance exams like the SAT and ACT tend to question their true predictive value in college admissions decisions. Perez (2002) offers several concerns. First, despite claiming to measure the educational skills necessary for success at college, both exams, the researcher contends, fail to accurately account for a large percentage of the variance in freshman grades. As such, she speculates that neither the SAT nor ACT assess what they purport to measure - suggesting a potential disconnect between both exams and actual classroom learning. Moreover, both the SAT and ACT show potential for coaching, a method that allows students to learn to take an exam and achieve better scores. Coaching may invalidate an exam and be available only to those students who can afford to pay the fees associated with coaching services. Finally, both exams show biases, specifically in format and content, against certain groups – particularly women, English as a second language learners, most racial minorities and those with low socioeconomic status (SES).

These issues have led some to question whether or not to continue using entrance exams in admissions decisions (Murray & Garcia, 1998; Organ, 2001; Smith & Garrison, 2005). Data gained from exploratory research demonstrates that a relatively significant number of students who score low on the SAT achieve grades at a level equal to their higher scoring peers while in college. In fact, relatively equal percentages of students

who scored in the bottom, 2nd, 3rd, and top quartile on the SAT tend to earn cumulative GPA's of A. A slightly higher percentage of students who scored in the bottom or 2nd quartile on the SAT do, however, tend to earn cumulative GPA's of C more than their peers who scored in the two higher quartiles (Smith & Garrison, 2005). Overall, research continues to support low to moderate predictive validity of the SAT, but highlights the measure's unfavorable tendency to over-identify low achievers, which may close admissions doors to otherwise successful students.

General Intelligence

Another familiar predictor of success is general intelligence. The concept of general intelligence suggests that a universal factor of intelligence exerts an influence across a range of mental ability domains. Abilities that tend to be associated with intelligence include general knowledge, ability for language, mathematics, problem solving, abstract reasoning, thinking, and creativity as well as capacity for memory, mental speed and acquiring knowledge (Sattler, 2001). Many of these abilities could be also associated with academic success and indeed, one might hypothesize that some are even necessary for success in school.

Some researchers, noting the relationship between the variables associated with general intelligence and academic success, have hypothesized that general intelligence may predict academic success. The results of studies designed to examine that hypothesis tend to reveal moderate relationships between the constructs when academic success is measured by grade. Significant relationships tend to remain between general intelligence and grade regardless of whether grade is measured using GPA or a single

course grade (Farsides & Woodfield, 2003; Lounsbury, Sundstrom et al., 2003; Ridgell & Lounsbury, 2004).

When the relationship between general intelligence and academic success was measured using the Otis-Lennon Test of Mental Maturity, an 80-item group administered test of general intelligence, and grade in a single course (psychological testing), Lounsbury, Sundstrom et al. (2003) found a moderate correlation of .40 ($p < .01$). Correlations of similar strength have been found between general intelligence and grade in a single course when general intelligence has been assessed using other tests. Ridgell and Lounsbury (2004), for example, found a moderate relationship between the two constructs ($r = .41, p < .01$) when intelligence was measured using a 30-item group administered multiple-choice test developed by Resource Associates.

A similar relationship has been observed between measures of intelligence and GPA. Using the Resource Associates' measure of general intelligence, Ridgell and Lounsbury (2004), for example, found a correlation of .39 ($p < .01$) with GPA. Other researchers have chosen to examine the relationship between more specific types of intelligence and GPA. Farsides and Woodfield (2003), for example, assessed intelligence using separate verbal and spatial measures. They found that cumulative GPA was significantly and positively correlated with Verbal IQ ($r = .20, p < .01$), but that no significant relationship existed with Spatial IQ.

Research regarding the explanatory power of intelligence has produced mixed findings, however, when other variables that impact students' grades are considered. In one study, 27% of the variance in course grade was explained by intelligence, work drive and the Big Five personality traits. There, general intelligence accounted for 16% of the

total variance, while measures of work drive and personality accounted for the remaining 11% (Lounsbury, Sundstrom et al., 2003). Another study found that 16% of the total variance in course grade could be explained by verbal and spatial intelligence, academic application and the Big Five personality variables (Farsides & Woodfield, 2003). Here, the explanatory power of verbal intelligence was just 2.5%, while that explained by spatial intelligence was insignificant. The majority of the total variance explained, instead, came from measures of academic application and from the Big Five trait of Openness.

Individual Differences

Individual differences, or person variables, also play a role in the level of success experienced by students at college. Person variables can be divided into two groups - socioemotional personality traits and cognitive variables. The first group consists of personality traits, which, due to an individual's internal disposition, manifest as generalized patterns of behavior in response to certain social or emotional stimuli (McAdams, 2006). Traits predispose individuals to think, feel and act in certain and consistent ways. The stronger any one trait is, the more an individual will engage in the thoughts, feelings or actions it disposes them toward (McCrae & Costa, 2003). The second group tends to consist of those individual differences that are more cognitive in nature. Values, attitudes and beliefs, for example, are considered to be cognitively-based person variables (McAdams, 2006).

Research regarding both personality traits and cognitively-based individual differences, though varied, has shown promise towards contributing to the academic success literature. A discussion of some of the prevailing research on personality traits

and two cognitively-based individual differences, motivation and work drive, follows below.

Individual differences in personality traits: The five-factor model.

Many models of personality have been proposed to explain differences in personality traits (see McAdams, 2006); however, it has become common practice in the social sciences to examine personality traits using the Five Factor Model of Personality (Digman, 1990; Goldberg, 1993; Howard & Howard, 2001; McAdams, 2006; McCrae & Costa, 2003). The Five Factor Model examines five broad dimensions of personality, called clusters. Each of the five clusters is an index on which all people can be assessed and can account for differences in individual personalities. Often referred to as The Big Five, the clusters include Openness, Conscientiousness, Extraversion, Agreeableness and Neuroticism, or more simply 'O,' 'C,' 'E,' 'A' and 'N' (Howard & Howard, 2001; McAdams, 2006; McCrae & Costa, 2003).

The Openness cluster purports to measure one's level of receptivity to new ideas, experiences or approaches. Those high in Openness tend to be open minded and receptive, while those low in Openness tend to prefer the familiar and practical as well as ideas that are concrete in nature. Conscientiousness measures an individual's tendency towards achievement and organization. People who score high on this dimension tend to be self-disciplined, obedient, ambitious and hardworking. Those low in Conscientiousness are inclined towards a more easygoing nature, are more lackadaisical and less demanding of themselves and others. Extraversion is a dimension that is characterized by individual differences in preference of lively activity and social interaction. Men and women who score high on measures of Extraversion tend to be

warm, friendly, have high levels of positive affect and often enjoy an active life style, stimulating environments, excitement and social interaction. Individuals low on Extraversion, on the other hand, are inclined to present themselves as more formal and impersonal and are likely to have weaker interpersonal attachments. The Agreeableness dimension assesses individual differences in the propensity to demonstrate trust, deference to others, generosity and selfless concern for others. Those high in Agreeableness tend to be trusting, unsuspecting, selfless, meek, compliant, humble and tender minded. Individuals who score low on this factor may be considered tough minded, antagonistic and sometimes, boastful. The fifth and final factor, Neuroticism, measures an individual's predisposition to experience unpleasant emotions as well as disturbances in thought and actions. Individuals who score high on Neuroticism tend to be worrisome, emotional, vulnerable, self-conscious, self-pitying and temperamental, while those who score low tend to be more calm, even-tempered, unemotional, self-satisfied, comfortable, and hardy (McCrae & Costa, 2003).

Costa and McCrae have suggested that each of the five clusters can be further subdivided into six facets or subordinate traits (McAdams, 2006; McCrae & Costa, 2003). They caution, however, that the facets are more arbitrary than the well-accepted and broader five factors (McCrae & Costa, 2003). Nevertheless, some kinds of sub-factor or facet system may be necessary in order to address the subtle differences that tend to occur among individuals regarding each trait (McCrae & Costa, 2003; Paunonem & Ashton, 2001). As such, it has been suggested that the Openness cluster can be subdivided into fantasy, aesthetics, feelings, actions, ideas and values. Conscientiousness is subdivided into competence, order, dutifulness, achievement striving, self-discipline

and deliberation. The third cluster, Extraversion, is suggested to include the subordinate traits of warmth, gregariousness, assertiveness, activity, excitement seeking and positive emotions. Agreeableness, the researchers posit, encompasses trust, straightforwardness, altruism, compliance, modesty and tender-mindedness, while the suggested sub-facets of the final cluster, Neuroticism, include anxiety, angry hostility, depression, self-consciousness, impulsiveness and vulnerability (McAdams, 2006; McCrae & Costa, 2003).

Many researchers agree that when taken together, the five clusters in the Five Factor Model offer a relatively complete picture of personality (Digman, 1990; Goldberg, 1993; Howard & Howard, 2001; McAdams, 2006; McCrae & Costa, 2003). Other researchers, however, believe that a true picture of personality can be explained by one or more of the competing models of trait personality, including Cattell's Sixteen Personality Factor System (Cattell, 1956), Eysenck's System (Eysenck, 1970), Guilford's System (Guilford, 1975), or The Interpersonal Circle Model (Leary, 1957; Wiggins, Phillips, & Trapnell, 1989). McCrae and Costa (2003) point out that some other theorists, unlike themselves, disagree with any model of personality described in terms of traits, and instead, may subscribe to certain psychodynamic theories. Despite these disagreements, the Big Five continues to garner the most respect in the research community (Digman, 1990; Howard & Howard, 2001; McAdams, 2006; McCrae & Costa, 2003) and as such, inventories based upon it have often been used by researchers interested in examining personality in a variety of contexts, including academia (Farsides & Woodfield, 2003; Howard & Howard, 2001; Lounsbury, Sundstrom et al., 2003; McAdams, 2006; McCrae & Costa, 2003; Wolfe & Johnson, 1995).

Using the Personal Style Inventory (PSI), a 136-item general personality inventory developed by Lounsbury and Gibson (2002) to measure the Big Five personality traits, Lounsbury, Sundstrom et al. (2003) found that Conscientiousness and Openness were significantly related to course grade ($r = .18, p < .05$ and $r = .16, p < .05$, respectively). Using the same measure of personality, Ridgell and Lounsbury (2004) found that only Emotional Stability significantly correlated with course grade ($r = .18, p < .05$).

A shorter measure, The “Big Five” Inventory, developed by John, Donahue and Kentle (1991), was used by Wolfe and Johnson (1995). Using this measure, which consists of only 35 items, one of the Big Five traits, Conscientiousness, was found to significantly correlate with GPA ($r = .34, p < .01$). The researchers found that Conscientiousness continued to predict a significant percentage of the variance even when high school GPA and SAT scores were added to the regression equation. In fact, Wolfe and Johnson (1995) found Conscientiousness to predict a larger percentage of the variance in college GPA than SAT score.

Still other personality inventories have been used by researchers attempting to study the relationship between personality and academic success. Two such inventories are the NEO Personality Inventory – Revised (NEO PI-R) and the NEO Five-Factor Inventory (NEO-FFI), personality questionnaires developed by Costa and McCrae (1989). Like the inventories mentioned above, including the PSI and The Big Five Inventory, the NEO PI-R and the NEO-FFI are designed to measure the Big Five personality traits. The NEO PI-R, a 240-item inventory, however, also assesses the six subfacets of each trait, while the NEO-FFI, a shortened 60-item version of the NEO PI-R

and the most widely administered personality measure, does not (Costa & McCrae, 1992). Musgrave-Marquart, Bromley and Dalley (1997) used the NEO PI-R in a study of 161 undergraduate students and found significant relationships between GPA and Neuroticism ($r = .22, p < .01$), Openness ($r = .24, p < .01$), Agreeableness ($r = .25, p < .01$) and Conscientiousness ($r = .32, p < .01$). Using the NEO-FFI, Farsides and Woodfield (2003) found that Openness and Agreeableness significantly correlated with cumulative college GPA. Interestingly, the strength of the correlation between each factor and student's GPA tended to increase with each year in attendance at the university, with the largest relationships tending to occur with the student's final cumulative GPA.

Individual differences in cognition: Education-related work drive and motivation.

Other person variables, such as differences in cognition, are not necessarily encompassed by the traditional Big Five personality traits. Unlike differences in personality traits, which measure aspects of individuals' response patterns to certain social or emotional stimuli, the cognition variables measure differences in individuals' values, attitudes, thoughts and beliefs (McAdams, 2006).

A review of academic success literature calls attention to individual differences in two cognitive personality variables, motivation and work drive. In psychology, motivation has been defined by Lahey (2003, p. 368) as, "an internal state that initiates and gives direction to thoughts, feelings and actions." Katzell and Thompson (1990) and Robbins et al. (2004) provide an excellent review of the motivational literature and highlight many of the prevailing theories of motivation, including broadly, those as external causes or internal processes, or more specifically, motives as drives, goals,

expectancies or self-worth. Although motivation and drive are clearly related, they have been considered differently in the literature. Here, motivation will refer to an internal process, specifically as an affective state relating to performance in college. This is in contrast to work drive, which will refer to a behavioral willingness to extend oneself in college, indicated by productivity and a tendency to complete projects, meet deadlines and attain success (Lounsbury, Sundstrom et al., 2003).

When considering academic success, individual differences in motivation and work drive have shown predictive value. A meta-analysis of the literature found that GPA correlates with academic motivation at the .26 level (Robbins et al., 2004). Work drive has been found to be significantly related with course grades, at the .28 ($p < .01$) (Lounsbury, Sundstrom et al., 2003) and .30 ($p < .01$) (Ridgell & Lounsbury, 2004) levels, as well as GPA at the .40 level ($p < .01$) (Ridgell & Lounsbury, 2004). Work drive also appears to be a good predictor of cumulative GPA when measured by attendance and completion of work not required. In one study of personality and individual differences, for instance, Farsides and Woodfield (2003) found class absences to be the strongest predictor of GPA ($r = -.36, p < .01$), accounting for stronger relationships than any of the Big Five Factors or intelligence. The researchers also found that a propensity to submit non-assessed work tended to significantly predict success; three of the four non-assessed class assignments collected significantly predicted GPA at the .21, .17 and .12 levels ($p < .01$).

Indeed, some studies have suggested that motivation and work drive subsume several Big Five traits. Komarraju and Karau (2005) found that academic motivation, when measured by a desire for good grades, significantly correlated with Neuroticism (r

= .19, $p < .05$), Extraversion ($r = .16$, $p < .05$), Agreeableness ($r = .19$, $p < .05$) and Conscientiousness ($r = .36$, $p < .01$). Another research team found that the positive impact of Agreeableness on academic success was significantly diminished when measures of work drive, as measured by academic application, were accounted for (Farsides & Woodfield, 2003). Adding work drive to the analysis similarly diminished the impact of all Big Five variables on academic success in another study by Lounsbury et al. (2003). There, two of the Big Five traits, Openness and Conscientiousness, were significantly related to academic success, but, when taken together, the composite measure of all the Big Five traits was unable to significantly add to the regression equation when work drive was entered first. One interpretation of these findings is that motivation and work drive subsume the Big Five personality traits, but another and more plausible interpretation suggests that differences in motivation and work drive may flow from differences in personality traits (Farsides & Woodfield, 2003; Komarraju & Karau, 2005; Lounsbury et al., 2003).

Goals

Students' educational goals, or desired outcomes, may also affect their academic performance. House (1994) chose to examine two types of goals that students may have, those of financial and social success. Financial goals, as defined by House (1994), were the total of students' self-reported desire for being successful financially, in their own business, and in becoming a financial and commerce expert. Social goals were determined by finding the sum of students' ratings on measures regarding their feelings towards the significance of influencing social values and politics, participating in community action and helping those less fortunate, and promoting racial understanding

and environmental cleanup. Correlational analyses examining the relationship between college GPA and both types of goals revealed an inverse relationship, particularly when considering financial goals. These findings suggest a tendency for students with higher financial and social goals to earn lower grades than their peers with lower goals in those areas.

Demographic Data

The aforementioned predictors including previous achievement, college admission test scores, general intelligence, personality traits and goals tend to focus on the student in isolation. Measures of demographics provide information regarding the environmental context in which students function. Demographic variables that tend to be significantly linked to college success include socioeconomic status (SES), sex and ethnicity.

SES is a derivative variable often resulting from combining a number of other variables including income, occupation, education, residence, and attendance at private or public school. SES scores place individuals or families somewhere within the status hierarchy of a particular society. SES is often used as a predictive variable in educational research; it is believed to influence a group's tendency towards certain beliefs, attitudes, values and motives, which may even be related to educational achievement (Lavin, 1965).

A meta-analysis of 109 studies shows that SES is positively related ($r = .155$) to college GPA (Robbins et al., 2004). In other words, students with higher SES tend to earn higher grades. Separate research, however, also suggests that the inverse is true when the upper most segments of SES are examined (Betts & Morell, 1999; Lavin, 1965). In

one study (Betts & Morell, 1999), for instance, students whose family income fell within the range of \$100,000 to \$199,999 earned higher GPA's than those whose parents earned less. What is interesting, though, is that students whose family income amounted to greater than \$200,000 tended to have GPA's that were not significantly different from those students whose parents earned less than \$25,000.

Gender also tends to be related to academic achievement. Research is limited, however, regarding the gender differences in achievement at the college level. Much of the available literature is instead aimed at investigating differences at the primary and secondary levels. One meta-analysis (Nowell & Hedges, 1998), which examined eight large, nationwide data sets collected at various points from the 1960's to 1990's, summarized these findings. Overall, males tended to achieve higher test scores than females. Males also tend to earn higher scores on certain subject specific tests including mathematics and science, but females tend to earn higher scores in reading, perceptual speed and writing. Interestingly, however, the few studies at the college level have revealed that women tend to earn higher GPA's than men (Betts & Morell, 1999; Chee, Pino & Smith, 2005; DeBerard et al., 2004; Lavin, 1965). In a study of 675 college students enrolled at a large university in Georgia, researchers found that, on average, women earned B's, while men earned B-'s (Chee et al., 2005). Other research suggests that the actual advantage in GPA for females, however, may be more modest. In fact, Betts and Morell (1999) found that females tended to earn GPA's that were only .06 points higher than males when using a 4.0 scale.

Race is another demographic variable often studied for its relationship to scholastic success. One study examining the GPA's of more than 5,000 undergraduate

students enrolled at the University of California at San Diego found that ethnic minorities tended to earn lower GPA's than Whites (Betts & Morell, 1999). The largest disparity occurred between Black and White students where Black students tended to earn GPA's .40 points less than White students. Additionally, Hispanic students earned GPA's that tended to be .33 points lower than White students while Asian students tended to earn GPA's that were .13 points lower. Strage (1999) supports these findings, as White students, in her smaller study of 150 undergraduates attending a large urban university in California, earned significantly higher cumulative GPA's and grades within their major than Hispanic or Asian students. In addition, Nettles, Thoeny and Gosman (1986), in a study of 4,094 White and Black college students from 30 institutions, found that White students, on average, had a B- GPA, while Black students had a C-. Racial differences also exist in college completion. According to the National Center for Education Statistics (1997), Asian students are most likely to complete college and obtain a four-year degree, followed by White, Black, Hispanic and Native American students.

Utility of Expanding Traditional Academic Predictor Equations

Despite the number of predictors available, admission to many colleges is based mainly on the traditional predictors of success – students' high school achievement and college admission test scores. Even when selected on the basis of these predictors, students sometimes fail to succeed at college. This is a logical outcome as studies have demonstrated that the two variables, when taken together, still only account for approximately 25% of the variance in college GPA (Betts & Morell, 1999; Brashears & Baker, 2003; House, 1994; Wolfe & Johnson, 1995).

One may posit, then, that the nontraditional predictors of academic success found in previous research including certain demographic data, personality traits and goals, as well as potentially undiscovered predictors, may further aid in the identification of students who will be successful at college. Research, in fact, supports this idea; the addition of one or more nontraditional variables increases the predictive power of traditional equations of academic success from as little as 3% to as much as 25% (Betts & Morell, 1999; Brashears & Baker, 2003; Wolfe & Johnson, 1995). As such, it is logical to suggest that personal traits and factors should be considered in analyses that attempt to determine the predictive variables related to student success.

Career Success

In the process of employee selection, it is important for employers to attempt to predict prospective employees' potential for success. Like colleges and university admissions offices, employers tend to look towards measures of previous achievement for the purpose of selection. The information available to employers may sometimes be very similar to that available to colleges and universities attempting to make admissions selections, while at other times, it may be quite different. In the case of a recent college graduate, for example, it is possible that the only available measure is college grades, whereas when they are looking to hire someone with real work experience, a record of work achievements should also be available.

When hiring recent graduates, many employers must rely on the predictive value of grades in order to make a hiring decision. Nevertheless, research has shown that success at college, as measured by grades, is not very predictive of success at work (Bretz, 1989; Roth, BeVier, Switzer & Schippman, 1996). Indeed, a meta-analysis

examining more than 60 studies found an observed correlation of .16 between grades and job performance and, although significant, the strength of relationship is undeniably weak. The predictive value of grades was strongest when job performance was measured one year after graduation ($r = .23$), but fell substantially each year thereafter ($r = .15$ after 2 to 5 years, $r = .05$ after 6 or more years). Even smaller relationships between grades and job performance were discovered when higher levels of education, specifically Ph.D.'s and M.D.'s, were considered ($r = .07$). This means that grades lose their predictive value as one's level of education is increased. Additionally, the predictive value of grades appeared to vary by field, with the highest relationships between grades and job performance occurring in educational organizations ($r = .21$), followed by business ($r = .14$), military ($r = .14$), scientific ($r = .12$), and medical ($r = .11$) (Roth et al., 1996).

The weakness of grades as accurate predictors of work success highlights a need for research in this area. The following discussion first reviews available literature regarding the methodologies currently used to measure and predict success at work and second, outlines directions for further research, including the current study.

Measurement of Career Success

A judgment of career success is twofold. First, there is an objective opinion that determines the success of an individual's career path by comparing it to external points of reference, which may include direct comparisons of the individual's career path to the career paths taken by others in similar or different fields. This judgment, often called extrinsic career success, or sometimes, objective career success, is rendered by others and may vary depending upon the individual doing the judging. The second component

offers a subjective opinion directly from the individual whose career is being considered. This construct, intrinsic career success, or sometimes, subjective career success, allows for individualized judgments of success based upon personal frames of reference (Bozionelos, 2004; Gattiker & Larwood, 1988; Judge, Cable, Boudreau & Bretz, 1995; Judge, Higgins, Thoresen, & Barrick, 1999).

Extrinsic Career Success

Extrinsic career success is an objective judgment usually determined by making comparisons between an individual's career path and a reference group. Conclusions regarding success are typically made on the basis of whether the individual's career has fallen short of, met or surpassed the path typically followed in the career (Bozionelos, 2004; Gattiker & Larwood, 1988; Judge et al., 1995, Judge et al., 1999).

It is the high visibility of some objective outcomes, like pay and ascendancy, which have earned them the reputation for being the hallmarks of extrinsic occupational success. Measures of pay are arguably the most objective measure of extrinsic success. Pay is most often measured by yearly income, salary or hourly wage; each of these provides straightforward, quantitative data, which can be readily utilized in making comparisons. Another measure often used to assess extrinsic success is ascendancy, or the number of promotions awarded throughout the career (Gattiker & Larwood, 1988; Judge et al., 1995; Judge et al., 1999). Measures of ascendancy, like pay, may take quantitative form; workers can easily be asked to report the number of promotions, or rises in job level, throughout their career (Judge et al., 1995).

Measures of extrinsic career success have expanded to include an evaluation of occupational status (Judge, 1999). Occupational status, according to Judge et al. (1999,

p. 622) is “related to societal perceptions of power and authority afforded by the job.”

Evaluations of occupational status are most commonly influenced by three variables.

The first considers the type or amount of education required for the occupation, whereas the others are considerations of potential through job performance, specifically potential for societal contribution and potential for extrinsic reward (Blaikie, 1977; Judge et al., 1999).

Intrinsic Career Success

Extrinsic measures are helpful for predicting one type of career success - objective or extrinsic career success. They are not as useful, however, for predicting the second type of career success - subjective or intrinsic career success (Bozionelos, 2004; Gattiker & Larwood, 1988; Judge et al., 1995; Judge et al., 1999). Extrinsic measures, such as pay, ascendancy and occupational status, leave out the individual’s subjective opinion of their success (Bozionelos, 2004; Furnham & Zacherl, 1986; Gattiker & Larwood, 1988; Judge et al., 1995; Judge et al., 1999; Poole, Langan-Fox & Omodei, 1993). It is plausible that someone may feel highly satisfied and successful in their career, yet not receive congruent pay, promotions or evaluations of occupational status. It is also possible that a high-powered executive, who earns an enviable living, is not content with his/her career. It is for these reasons that measures of intrinsic career success, often operationalized as satisfaction, are another important aspect of career success.

The point of reference for judging intrinsic career success is not set by others, but by the individual. This is called a personal frame of reference, which includes the individual’s subjective definitions of success or failure (Gattiker & Larwood, 1986,

1988). The degree to which the individual feels successful is mediated by how well their actual career relates to their personal standards for success. Small inconsistencies between an individual's actual career and their expectations should not overwhelmingly interfere with feelings of success, while larger inconsistencies may indeed make the individual feel more like a failure.

Predictors of Extrinsic Career Success

Extrinsic success, measured by pay, ascendancy or occupational status, is often predicted by characteristics like general mental ability and certain demographic, motivational, and person variables. The related literature reviewing these predictors is discussed below.

General Intelligence

As a predictor, general intelligence is often used to forecast performance (Kuncel, Hezlett & Ones, 2004). One type of performance examined has been extrinsic career success. A meta-analysis of the available literature published before 2003 found that various measures of general intelligence, including standardized intelligence, aptitude and critical thinking tests, positively relate to salary ($r = .27, p < .05$) (Ng, Eby, Sorensen, & Feldman, 2005). Other studies have also found that general intelligence is predictive of salary, when assessed using the Stanford-Binet intelligence test (Judge et al., 1999), and occupational grade and job title, when assessed with the UK edition of the Cattell 16PF5 (Bozionelos, 2004).

Demographic Data

It is not surprising that researchers investigating extrinsic career success have found that certain demographics tend to predict higher salaries than others. A meta-

analysis of the demographic variables indicates that those with higher salaries tend to be male ($r = .18, p < .05$), White ($r = .11, p < .05$), married ($r = .16, p < .05$) and of older age ($r = .26, p < .05$) (Ng et al., 2005). Other studies corroborate that men tend to earn higher salaries than women (Gattiker & Larwood, 1988; Jaskolka, Beyer & Trice, 1985; Judge et al., 1995), Whites earn more than racial minorities (Jaskolka et al., 1995), older workers earn more than younger workers and married individuals earn more than singles (Gattiker & Larwood, 1988; Judge et al., 1995). There is, in addition, some research suggesting that a worker's salary is also positively related to the number of children he or she has (Gattiker & Larwood, 1988; Judge et al., 1995). Interestingly, the potential benefit of marriage for a worker may be moderated by spousal employment status. In fact, Judge and colleagues (1995) found that marital status only significantly predicted higher income when the participant's spouse did not work outside the home. It may be the case that workers with homemaker spouses are less responsible for home and childcare than their married co-workers with working spouses, allowing them more time to devote to work.

Time spent working for the same company also tends to positively relate to higher earnings (Gattiker & Larwood, 1988; Jaskolka et al., 1985), as do years spent working in the same career (Gattiker & Larwood, 1988); however, some research suggests that years spent working in the same location, or company branch site, negatively relates to salary (Jaskolka et al., 1985).

Higher salaries also tend to positively correlate with level of education (Gattiker & Larwood, 1988; Jaskolka et al., 1985; Judge et al., 1995; Ng et al., 2005); however, the quality of education, according to Judge et al. (1995) is also important. Specifically,

executives with law or business degrees, graduate degrees, and degrees from Ivy League or comparable universities tend to earn more than others in similar positions (Judge et al., 1995). An engineering degree, however, may also relate to higher income in certain fields. In one study, managers of a large U.S. corporation specializing in communications, who earned engineering degrees, reported higher salaries than those who earned a business degree (Jaskolka et al., 1985).

Relationships also exist between certain demographic variables and ascendancy, another measure of extrinsic success. Significant demographic predictors of promotion, according to a meta-analysis of the literature, include being male ($r = .08, p < .05$), married ($r = .09, p < .05$), having a higher level of education ($r = .05, p < .05$) and being of older age ($r = .02, p < .05$) (Ng et al., 2005). Jaskolka et al. (1985) also found that age and years spent working for the same company tend to be positively associated with higher levels of status within a company, but that years spent working for the same location within the company was inversely related.

Individual Differences

There is some evidence to suggest that individual differences, including socioemotional personality traits and cognitive variables, also affect extrinsic career success. Research in both, though varied, has shown promise towards contributing to the extrinsic career success literature. A discussion of some of the prevailing research on personality traits and two cognitively-based individual differences, motivation and work drive, follows below.

Individual differences in personality traits.

As previously noted, the Big Five traits, including Neuroticism, Extraversion, Openness, Conscientiousness and Agreeableness, described by the Five Factor Theory, provide one widely accepted model by which to examine personality (Digman, 1990; Goldberg, 1993; Howard & Howard, 2001; McAdams, 2006; McCrae & Costa, 2003). Despite its potential role in occupational research, few researchers have examined the Big Five for the purpose of predicting extrinsic career success.

Researchers, in fact, conducting a meta-analysis of the literature published prior to 2003, found only seven studies that examined the Big Five's relationship to extrinsic success (Ng et al., 2005). The meta-analysis found that, when measured by salary, extrinsic success was positively related to Conscientiousness, Extraversion and Openness at the .07, .10, and .04 levels ($p < .05$), respectively, and inversely related to Neuroticism and Agreeableness at the -.12 and -.10 levels ($p < .05$), respectively. Interestingly, Seibert and Kraimer (2001) found that there was a significant inverse relationship between Agreeableness and salary only in people-oriented occupations that required a lot of interpersonal interactions. When measured by ascendancy, extrinsic success was positively related to Conscientiousness and Extraversion at the .06 and .18 levels ($p < .05$), respectively, and inversely related to Neuroticism and Agreeableness at the -.11 and -.05 levels ($p < .05$), respectively (Ng et al., 2005).

Other studies provide some results beyond that reported by Ng et al. (2005). Judge et al. (1999), for example, examined the relationship between the Big Five and the third measure of extrinsic success, occupational status. There, occupational status was positively associated with Extraversion and Conscientiousness, but inversely related to

Neuroticism. In addition, conflicting results, notably regarding the relationship between the Big Five and ascendancy, are reported by Bonzionelos (2004). There, ascendancy was found to have an inverse relationship with Neuroticism, Extraversion, Conscientiousness and Agreeableness.

Alternative models of personality have also been used to study the relationship between personality and extrinsic career success. Using the Eysenck Personality Questionnaire (EPQ), an inventory that provides four scores including Psychoticism, Extraversion, Neuroticism and Lie, Furnham and Zacherl (1986) found that salary tends to relate positively to Extraversion ($r = .20, p < .05$) and inversely to Neuroticism ($r = -.29, p < .01$).

Related literature examined the relationship between the Big Five traits and measures of job performance. Although not a measure of extrinsic success itself, job performance presumably influences one's attainment of success, and therefore, is examined here. Overall, Conscientiousness appears to have the most impact on workers' job performance and appears to positively relate to the job performance criteria across many occupational groups (Barrick & Mount, 1991, 1993). Extraversion also tends to positively correlate with job performance, particularly in positions where interpersonal skills are required (Barrick & Mount, 1991). When levels of on-the-job autonomy are considered, those high in Conscientiousness and Extraversion perform best when autonomy is high, while those high in Agreeableness tend to perform best when autonomy is low (Barrick & Mount, 1993).

Individual differences in cognition: Work related motivation and drive.

Work motivation and drive may also help to predict extrinsic success. Related to work, Hackman and Oldham (1975) suggest that motivation may be thought of as the degree to which an individual desires to perform their job well. In their theory, work motivation is measured by the degree to which an individual experiences positive feelings from performing their job well and negative feelings from performing their job poorly. In contrast, work drive, or the degree to which an individual extends himself or herself at work, is measured by number of hours, evenings and weekends worked, productivity, and the ability to finish projects and meet deadlines (Lounsbury, Gibson & Hamrick, 2004).

As one might suppose, research has determined that increasing increments of work motivation and drive tend to predict more extrinsic career success. A meta-analysis, in fact, reveals that higher pay is positively associated with individual's psychological investment in their work ($r = .12, p < .05$) and with the number of hours worked per week ($r = .24, p < .05$) (Ng et al., 2005). Judge et al. (1995) lends supports and adds that higher salary also positively relates to the number of evenings worked per month as well as a worker's ambition.

Predictors of Intrinsic Career Success

Intrinsic career success is often defined as career satisfaction. Given that the term 'satisfaction' is inherently subjective, it follows that intrinsic career success allows for individual interpretation. In fact, to evaluate this type of success, individuals are called upon to examine their careers using only their personal, subjective definitions of success and failure, which may include both extrinsic and intrinsic variables. In spite of the subjective nature of this process, researchers have been able to highlight certain variables that seem to be common predictors of intrinsic career success. Intrinsic predictors tend to

be demographic and motivational in nature, however individuals' criteria for success may also be relevant. An explanation of these predictors follows.

Extrinsic Success

Often, extrinsic factors, including pay, ascendancy and occupational status influence individuals' subjective or intrinsic evaluations of their career success. If such factors are deemed important, they may have a strong ability to influence intrinsic judgments on an individualized basis. Research has demonstrated this trend when intrinsic career success has been operationalized as career satisfaction; that is, two objective variables often used to measure career success, pay and ascendancy, positively predict career satisfaction (Judge et al., 1995). There is also some indication that occupational status is predictive of career satisfaction. Poole et al. (1993) found that participants with a professional status had higher career satisfaction than those with other jobs.

Demographic Data

Some demographic factors, including age, race, education, marital status and family may predict intrinsic career success, or career satisfaction. The literature is varied, however, and reveals some discrepancies regarding the significance and correlational direction of demographic predictors. Interestingly, the literature also demonstrates a tendency for some of the predictors to change depending upon whether participants were asked to evaluate their level of satisfaction with their present job versus their complete career (Gattiker & Larwood, 1988; Judge et al., 1995; Ng et al., 2005).

When evaluating participants' present job satisfaction in one study, researchers found only race to significantly predict satisfaction (Judge et al., 1995). There, White

participants were significantly less satisfied with their jobs than Black participants working in similar high-level executive positions. The number of demographic predictors was larger when the same study examined participants' total career satisfaction. In this case, lower levels of career satisfaction were reported not only by Whites, but also by participants who were older, had job tenure and spent more time caring for children than others in similar positions. More career satisfaction, however, was reported in this scenario when participants had earned their terminal degree from a high quality institution, had an engineering degree, or had received a high accomplishment rating from an executive search firm.

In contrast, another study found that demographics, with the exception of family, only significantly affected career satisfaction when looking at the career simply in terms of present position and salary held (Gattiker & Larwood, 1988). There, less educated individuals who were older and married reported more satisfaction than their peers with different demographics. When asked to evaluate their entire career, however, respondents' satisfaction only significantly correlated with family variables. Participants tended to report more satisfaction with their careers when they also experienced a sense of satisfaction and positive influence from their families. The family variables examined, which included family influence on locality and subsequent opportunity and reciprocal family-job conflicts, necessarily limit the generalizability of these findings.

A third study provides more discrepancies regarding demographics. There, success at college was inversely related to intrinsic career success; participants who reported higher grades tended to report lower levels of satisfaction (Poole et al., 1993). One possible explanation for these results may be that high achieving students expect to

achieve congruent success at work, and upon experiencing average levels of success, feel less fulfilled than their peers who experienced lower levels of success at school.

A meta-analysis also fails to provide conclusive results. There, being White, married and having a higher level of education were positively related to intrinsic success, however the strength of each relationship was quite weak ($r = .03$, $r = .06$ and $r = .03$, $p < .05$, respectively) (Ng et al., 2005).

Success Criteria

Success criteria variables are inherently individual. People develop their own notions of success based upon a combination of their individual preferences and those valued by society. Criteria often equated with success include income and related benefits, position, respect, family life and autonomy. Specific criteria may vary widely from individual to individual and are dependent upon their values and their job. Nevertheless, one could assume that an individual is satisfied with their career if their success criteria are met, regardless of what that specifically may be (Gattiker & Larwood, 1988).

The predictive nature of success criteria may, at times, be hampered by their variability across individuals. Researchers could choose, however, to examine those criteria that are mostly likely to be associated with success for certain occupations, like researchers Gattiker and Larwood did in their 1988 study of managers. There, the researchers, based on previous management literature, chose income, organizational level, respect, personal growth and family life. Results demonstrated positive relationships between each criterion and career satisfaction among managers, thereby providing the management literature with valid predictors of career satisfaction.

Individual Differences

Intrinsic success may also be affected by individual differences in personality, work motivation and work drive. Research in these areas, though limited, has shown potential towards contributing to the intrinsic career success literature. A discussion of some of the prevailing research follows below.

Individual differences in personality traits.

Personality, as examined by the Five Factor theory, may also be a predictor of intrinsic career success, however, like its relationship with extrinsic success, has not commonly been studied (Ng et al., 2005). Nonetheless, a few researchers have studied the two constructs and found significant results (Bozionelos, 2004; Judge et al., 1999; Seibert & Kraimer, 2001), which have been summarized in the meta-analysis by Ng et al. (2005). Specifically, intrinsic success is positively related to Conscientiousness, Extraversion, Agreeableness and Openness at the .14, .27, .11 and .12 levels ($p < .05$), respectively, and negatively related to Neuroticism at the -.36 level ($p < .05$). Intrinsic success, some researchers posit, may also be measured through a series of five sub-facet assessments including job satisfaction, hierarchical success, financial success, interpersonal success and life satisfaction (Bozionelos, 2004; Gattiker & Larwood, 1986). When measured in this way, researchers found negative correlations between Neuroticism and two sub-facets of intrinsic success, interpersonal success and life satisfaction, but positive correlations between Agreeableness and life satisfaction (Bozionelos, 2004).

The available literature is larger when alternatives to the Big Five model of personality are considered. For example, the Eysenck Personality Questionnaire (EPQ),

which suggests a 3-factor model of personality, was used by Furnham and Zacherl (1986) to examine the relationship between personality and intrinsic career success. The researchers found that intrinsic career success, as measured by overall job satisfaction, is correlated with Extraversion ($r = .18, p < .05$), but not Psychoticism or Neuroticism. Interestingly, however, specific factors of overall job satisfaction were inversely correlated with Neuroticism, including amount of work ($r = -.33, p < .001$), relationship with co-workers ($r = -.31, p < .001$) and pay ($r = -.29, p < .01$), as well as with Psychoticism, including supervision ($r = -.17, p < .05$), nature of the work including degree of autonomy and variety ($r = -.21, p < .05$) and relationship with co-workers ($r = -.19, p < .05$).

Other alternatives, including the Personal Style Inventory (PSI), developed by Lounsbury and Gibson (2000) have also been used to study individual differences. Specifically designed to study individual differences in the context of work, the PSI provides an assessment of the following constructs: Assertiveness, Conscientiousness, Customer Service Orientation, Emotional Resilience (the inverse of Neuroticism), Extraversion, Image Management, Intrinsic Motivation, Openness, Optimism, Teamwork, Tough-mindedness and Work Drive. Research using the PSI has yielded results pertinent to intrinsic career satisfaction in multiple business-related occupational groups including accountants, clerical workers, consultants, executives, sales representatives, etc. In the full sample, each of the PSI constructs were determined to significantly relate to career satisfaction, however, some constructs' relationships were more notable than others. Emotional Resilience, for example, most strongly related to career satisfaction ($r = .27, p < .01$), however, the relationship of Work Drive ($r = .15, p$

< .01), Extraversion ($r = .13, p < .01$), Assertiveness ($r = .12, p < .01$) and Conscientiousness ($r = .12, p < .01$) were also notable (Lounsbury et al., 2004).

Individual differences in cognition: Work related work drive and motivation.

There is some evidence to suggest that work motivation affects intrinsic career success. One research team found that work motivation was positively related to satisfaction ($r = .51, p < .01$), potentially implying that workers who were more self-motivated to perform effectively were more likely to be satisfied with their jobs (Hackman & Oldham, 1975). An indicator of work motivation may be work centrality, the degree of psychological investment or derivation of self-identity from work. A meta-analysis of the available literature found that degree of work centrality was positively related to intrinsic career success ($r = .22, p < .05$), suggesting that the more psychologically invested workers are, the more likely they are to be satisfied with their careers (Ng et al., 2005).

Work drive may also help to predict intrinsic career success. When examining participants' satisfaction with their entire career, one research team found that work drive positively predicted satisfaction, potentially implying that the more hard working individuals are, the more likely they are to be satisfied with their careers (Lounsbury, Loveland et al., 2003). In the same study, work drive also positively predicted workers' present job satisfaction. Judge et al. (1995) found that two indicators of work drive, number of evenings worked per month and hours of work desired, were found to positively relate to present job satisfaction. A meta-analysis of the available literature examined another indicator, number of hours worked, which also positively predicted satisfaction ($r = .13, p < .05$) (Ng et al., 2005). One explanation for these positive

relationships is that satisfied workers are willing, or even desire, to work unconventional hours and work more than their less satisfied peers.

The Current Study

Prior research has begun to provide valuable information regarding the variables that tend to predict success at college and at work. The literature is lacking, however, in two specific ways. First, research is extremely varied and in some respects, quite sparse, regarding the effects of individual differences - particularly personality and cognitive traits - on the success of students and workers. Second, no literature exists, to the researcher's knowledge, that directly compares the predictors of success for students and for workers. The current study was designed to address these limits by specifically gathering information regarding the individual differences that tend to relate to the success of students and workers and also, by creating and comparing predictor models of success in students and workers. This is important because one of the main purposes of higher education is to prepare students for employment. A recent graduate's GPA may presumably affect employability, however, there is no available research demonstrating whether or not individual differences that impact grades obtained in college similarly impact success at work. Important implications arise if the individual differences associated with good grades are not in fact associated with success at work. The first implication concerns employers of new graduates – they may want to consider additional predictors of success including personality, motivation and work drive. This directly leads to the second implication, the true practical validity of grades. Colleges and universities may wish to adjust this measure of evaluation if grades do not in fact predict success at work. One option would be to consider an individualized assessment of

success where students could earn evaluations in areas besides grades. Class attendance, participation, peer and group leadership, interpersonal skills and extracurricular activities, for example, provide insight into individual differences that may be of value to potential employers.

A study that compares the individual differences tending to relate to successful students and workers needs to take into account that different professions are likely to attract different types of individuals. For example, it is logical to expect students majoring in Business to have traits more like business workers than social workers. The current study attempted to begin to uncover student-worker similarities and differences by examining undergraduate students majoring in psychology and working graduates of the psychology program from the same university. In light of past research and the nature of the field of psychology the following hypotheses have been developed.

Collegiate Success

With regard to collegiate success, I expected that four of the Big Five traits, including Conscientiousness, Openness, Agreeableness and Neuroticism, would be important for predicting GPA. Certain demographic variables, including gender, SES and race, and two cognitive personality variables, academic motivation and work drive, were also expected to be significant predictors of GPA. The specific hypotheses were:

Hypothesis 1a: Conscientiousness, Openness and Agreeableness would positively predict GPA.

Hypothesis 1b: Neuroticism would negatively predict GPA.

Hypothesis 1c: Academic motivation would positively and work drive would negatively predict GPA.

Extrinsic Career Success

With regard to the prediction of salary, I expected that three of the Big Five traits, including Extraversion, Conscientiousness, and Neuroticism, would be most important. Select demographic data, including gender, race, level of education and age, were also expected to be important predictors of salary. One cognitive personality variable, work drive, was also expected to predict salary. The specific hypotheses were:

Hypothesis 2a: Extraversion and Conscientiousness would positively predict salary.

Hypothesis 2b: Neuroticism would negatively predict salary.

Hypothesis 2c: Work drive would positively predict salary.

Intrinsic Career Success

With regard to the prediction of career satisfaction, I hypothesized that three of the Big Five traits, including Neuroticism, Agreeableness and Extraversion, would be most important. Select demographic data, including race, age, level of education and collegiate GPA, were also expected to be important predictors of career satisfaction. Two cognitive personality variables, work motivation and work drive, were also expected to predict career satisfaction. The specific hypotheses were:

Hypothesis 3a: Agreeableness and Extraversion would positively predict career satisfaction.

Hypothesis 3b: Neuroticism would negatively predict career satisfaction.

Hypothesis 3c: Work motivation, positively, and work drive, negatively, would predict career satisfaction.

Comparing Collegiate and Career Success

It was expected that some of the predictors of collegiate success will be the same as those that tend to predict success at work, but also, that some would be different. With regard to the variables of interest that tend to predict collegiate and extrinsic work success, the following was expected:

Hypothesis 4a: Openness was expected to positively predict GPA, but not salary, while Extraversion was expected to positively predict salary, but not GPA.

With regard to the variables that tend to predict collegiate and intrinsic work success, the following was expected:

Hypothesis 4b: Openness and Conscientiousness were expected to positively predict GPA but not career satisfaction, while Extraversion was expected to positively predict career satisfaction, but not GPA.

CHAPTER 2

METHOD

Student Participants

Sixty-five sophomores, juniors and seniors majoring or planning to major in psychology at a small private university in western New York participated. One participant's information was excluded from the study based upon her status as a transfer student with only 1 semester's grades, resulting in a final student sample size of 64. The actual sample size fell short of the planned sample size of 74 which was determined using a table developed by Cohen and Cohen (1983) to obtain a desirable power level (.75) and detect a moderate effect size (.3 at a significance level of .05). Seventy-five percent of the total sample was female (n = 48) and 25% was male (n = 16). Participants ranged in age from 19 to 40 years with a mean age of 22. Sixteen participants self-identified as students in their sophomore year, 20 self-identified as students in their junior year and 28 reported being in their senior year. Fifty-four participants self-identified as 'Caucasian' (84.4%), 3 as 'Black' (4.7%), 4 as 'Asian' (6.3%), 1 (1.6%) as 'Hispanic' and 2 as 'Other' (3.1%). Additional descriptive statistics and frequencies for the student sample may be found in Table 1.

Working Participants

There were a total of 107 participants. A total of 112 packets were returned, but five were returned with one or more necessary measures largely incomplete or missing (i.e., the NEO-FFI) and therefore, were not used in the study. The Cohen and Cohen (1983) table was also used to determine that a minimum of 74 graduates of the university's undergraduate psychology program would be recruited. Solicitation letters,

to inform the potential participants of the opportunity to participate, and the packets containing the self-report measures to be completed, were sent via mail to approximately 320 alumni whose addresses were available through the university. Approximately 77% of the working participant sample was female ($n = 82$) and 23% was male ($n = 25$). Participants ranged in age from 23 to 56 years old, with a mean age of 33. Ninety-eight participants self-identified as 'Caucasian' (91.6%), 3 as 'Black' (2.8%), 1 as 'Asian' (0.9%), 3 as 'Hispanic' (2.8%) and 2 as 'Other' (1.9%). Thirty-six participants reported that their highest degree obtained was a 4-year degree (i.e., B.A., B.S.), 53 reported having obtained a masters degree (e.g., M.A., M.S.) and 18 reported having obtained a doctoral degree (e.g., Ph.D., J.D, M.D). Additional descriptive statistics and frequencies for the working sample may be found in Table 2.

Student Measures

Student participants completed a survey packet consisting of an information sheet (see Appendix A) and the following questionnaires. The measures were completed in group sessions outside of class time. Students signed Informed Consent forms and received Feedback Sheets regarding the study when they turned in their questionnaires.

Demographic Variables

Several variables were used in the study, based upon the student information sheets. These were:

Race: Participants were asked to identify their race by selecting one of five options: White, Black/African American, Asian, Hispanic/Latino or Other.

Participants were asked to specify their race when 'Other' was selected. The effect of race in terms of white and nonwhite was examined in the structural

equation model, which is described below. ‘White’ was assigned a value of ‘0’ and ‘Black/African American,’ ‘Asian,’ ‘Hispanic/Latino’ and ‘Other’ were assigned a value of ‘1’.

Gender: Participants identified their gender by selecting ‘Male’ or ‘Female’. In the model, ‘Male’ was coded ‘0’ and ‘Female’ ‘1’.

College Year: Participants identified their year in college by selecting ‘Sophomore,’ ‘Junior’ or ‘Senior.’ In the model, ‘Sophomore’ was coded ‘1,’ ‘Junior’ ‘2’ and ‘Senior’ ‘3’.

Age: Participants provided their age in the space provided on the information sheet. In the model, age was entered exactly as provided by the participant and treated as a scale variable.

SES: Participants indicated their parents’ highest education level completed by selecting one of six options for their mother and father: ‘Did not finish high school,’ ‘High school graduate or GED,’ ‘Greater than high school, but less than 4-year college degree,’ ‘College graduate,’ ‘Master’s degree or equivalent,’ or ‘Ph.D., MD, JD or other doctoral degree.’ In the model, each parent’s highest education level completed was coded from ‘0’ to ‘5’ where ‘0’ represented ‘Did not finish high school’ and ‘5’ represented ‘Ph.D., MD, JD or other doctoral degree.’ SES was comprised of mother’s and father’s education completed for each participant.

GPA: Participants gave permission to obtain their GPA from university records. In the model, GPA was entered exactly as provided by the university (range 0 to 4.0) and treated as a scale variable.

NEO Five-Factor Inventory (NEO - FFI; Costa & McCrae, 2003):

The NEO - FFI is a short 60-item version of the Revised NEO Personality Inventory (NEO PI-R) that measures and provides a score for each of the five broad domains of personality: Neuroticism (N), Extraversion (E), Openness (O), Agreeableness (A) and Conscientiousness (C). Respondents read each item and selected on a 5-point Likert scale if they ‘strongly disagree,’ ‘disagree,’ ‘neutral,’ ‘agree,’ or ‘strongly agree’ with the statement. Items include statements that may be used to describe thoughts, feelings, behaviors and actions common to individuals. Scores can range from 0 to 48 on the scales. Domain level reliabilities range from .68 to .86 and correlations of .77 to .92 have been found with the NEO PI-R.

6-Item Work Motivation Scale (Hackman & Oldham, 1975):

The 6-Item Work Motivation Scale is self-report questionnaire designed to measure the degree of self-motivation, through the experience of positive and negative feelings, to perform well. Responses were made on a 7-point Likert scale from strong disagreement to strong agreement with the statements. The scale was modified for the student population by substituting the words ‘college’ and ‘university’ for ‘job’ and ‘work’. Sample items include, ‘My opinion of myself goes up when I do well in college’ and ‘I feel bad and unhappy when I discover that I have performed poorly in college.’ A total score was obtained by finding the average response to the items; higher scores were indicative of more work motivation. A coefficient alpha of .79 (Kim & Schuler, 1979) and internal reliability of .71 (Hackman, Pearce & Wolfe, 1978) have been reported for the original scale.

Work Drive Scale – Student Version (Lounsbury & Gibson, 2005):

The Work Drive Scale – Student Version is a self-report 9-item questionnaire designed to measure work drive as a disposition to study long hours, take on extra assignments and display a high level of energy at school, and to see oneself as being a hard worker when compared to other students. Respondents read each item and selected on a 5-point Likert scale if they ‘strongly disagree,’ ‘disagree,’ ‘in-between,’ ‘agree,’ or ‘strongly agree’ with the statement. A sample item includes, ‘I don’t mind putting in very long hours of study if it helps me make good grades.’ A total score was obtained by finding the average response to the items; a higher score was indicative of more work drive. Studies of internal consistency and reliability have found coefficient alphas ranging from .80 to .83 (Lounsbury et al., 2004).

Worker Measures

Working participants were asked to complete a survey packet consisting of an information sheet (See Appendix B) and the following questionnaires.

Demographic Variables

Several variables were used in the study, based upon the worker information sheets. The majority of the information was the same as for students. Thus, the variables related to race, gender, age, and SES were the same. In addition, information relating to the worker’s highest degree obtained and salary were collected.

Highest Degree: Participants identified their highest educational degree obtained by selecting one of three options: ‘B.A. or B.S.,’ ‘M.A. or M.S.’ or Ph.D., JD, MD or equivalent.’ In the model, ‘B.A. or B.S.’ was coded ‘0,’ ‘M.A. or M.S.’ ‘1’ and Ph.D., JD, MD or equivalent’ ‘2’.

Salary: Participants provided their salary in the space provided on the information sheet. In the model, salary was entered exactly as provided by the participant and treated as a scale variable.

GPA: Participants gave permission to obtain their GPA from university records. In the model, GPA was entered exactly as provided by the university (range 0 to 4.0) and treated as a scale variable.

NEO Five-Factor Inventory (NEO - FFI; Costa & McCrae, 2003):

Working participants also completed the NEO - FFI. As stated above, the NEO – FFI is a 60-item self-report questionnaire that measures personality traits through statements selected by the participant to best describe behaviors.

6-Item Work Motivation Scale (Hackman & Oldham, 1975):

Working participants also completed the 6-Item Work Motivation Scale, which was described above. Sample items include, ‘Most people on this job feel a great sense of personal satisfaction when they do the job well,’ and ‘I feel a great sense of personal satisfaction when I do my work well.’ A coefficient alpha of .79 (Kim & Schuler, 1979) and internal reliability of .71 (Hackman, Pearce & Wolfe, 1978) have been reported.

Work Drive Scale – Adult Version (Lounsbury & Gibson, 2006):

Working participants also completed the Work Drive Scale. The Work Drive Scale – Adult Version is a self-report 12-item questionnaire designed to measure the tendency to engage in certain work-related behaviors. Respondents selected one of five boxes, which function much like a 5-point Likert scale, between two bipolar statements. An example item provides the following statement, ‘I don’t like to take on extra responsibilities and duties in my work,’ followed by five boxes numbered 1 to 5 and then

the statement, 'I like to take on extra responsibilities and duties in my work.' A total score was obtained by finding the average response to the items; a higher score was indicative of more work drive. Internal reliability of .80 to .83 has been reported for five different occupational group samples (Lounsbury et al., 2004).

Career Satisfaction Scale (Greenhaus, Parasuraman & Wormley, 1990):

The Career Satisfaction Scale is a 5-item self-report questionnaire that measures an individual's satisfaction with their career. Respondents read each item and selected on a 5-point Likert scale their level of agreement with the statement. Sample items include 'I am satisfied with the success I have achieved in my career' and 'I am satisfied with the progress I have made toward meeting my goals for income.' A total score was obtained by finding the average response to the items; a higher score was indicative of more career satisfaction. Studies have demonstrated the high internal consistency (Cronbach's α of .88) (Greenhaus et al., 1990).

ANALYSES

It was expected that some correlations would exist among the independent variables in the present study, thus requiring a non-experimental analysis such as structural equation modeling (SEM). SEM was appropriate in a case like the current study, where the researcher was able to hypothesize a causal direction, and is described by Keith (1988) as a method for examining observed variability among variables. SEM programs allow researchers to examine hypotheses using models or graphs. Variables in the model and their presumed causes and effects are based on theory, time precedence, relevant research and logic or common sense. This non-experimental technique allows researchers to control background variables, which may help to eliminate spurious or false correlations between variables that occur when two variables appear to be related, but in reality, the correlation is a result of a third variable affecting both. The Analysis of Moment Structures program, version six (AMOS), which uses a graphic approach to produce and analyze path diagrams, was used to analyze the following models (Arbuckle, 2003; Arbuckle & Wothke, 1999). It is important to note that each model was analyzed separately; the different outcome variables examined did not allow for direct statistical comparisons among the models.

The Models

Basic principles of SEM, as outlined by Keith (2006), were employed to create three hypothesized models – collegiate success (see Figure 1), extrinsic career success (see Figure 2) and intrinsic career success (see Figure 3). Rectangles represent measured variables for which there are actual measures in a data set and ellipses represent unmeasured or latent variables for which there are not measures in the data. Latent

variables are estimated from measured variables. Straight arrows delineate paths or presumed influences drawn from variables representing a presumed cause to those representing a presumed effect. Curved, double-headed arrows represent correlations between variables with no implied causality. Disturbances, sometimes called residuals, are also included in the hypothesized models. Represented by a circle, disturbances account for all other influences, unaccounted for by a model, on a particular variable.

In the hypothesized model for collegiate success, the variables of gender, race, socioeconomic status (SES), age and college year are exogenous. In the hypothesized model for work success, the variables of education level, gender, race, socioeconomic status (SES), age and college GPA are exogenous. Exogenous variables do not have causes that are considered in the model, but do exert causal influences on other variables inside the model. Due to the assumptions of time precedence and logic, the above-mentioned exogenous variables appear first in the two models. Curved, doubled-headed arrows drawn between these variables allow AMOS to assume correlations without implying causality.

Endogenous variables are found inside the model and are influenced by and affect other variables in the model. Straight arrows may go toward and/or away from endogenous variables. All three hypothesized models included the following endogenous variables: Openness, Conscientiousness, Extraversion, Agreeableness and Neuroticism, as well as variables measuring motivation, work drive and success. Each model is discussed in turn below.

College Success Model

It was hypothesized that personality affects motivation, work drive and success (measured by GPA), and as such, Openness, Conscientiousness, Extraversion, Agreeableness and Neuroticism were placed before those variables in the model. Personality is thought to be a longstanding, stable trait, so it came before the others also based on time precedence (Farsides & Woodfield, 2003; Lounsbury, Sundstrom et al., 2003; Musgrave-Marquart et al., 1997, Ridgell & Lounsbury, 2004; Wolfe & Johnson, 1995). Academic motivation, which measures an individual's motivation to do well in school based upon the degree to which academic success or failure affects their feelings and degree of self-satisfaction, was expected to directly influence college success and work drive. This expectation was based on past research that individuals with higher GPA's tend to report more academic motivation and even tend to exhibit congruent behaviors, including a propensity to attend class and submit non-assessed work more often than others (Farsides & Woodfield, 2003; Robbins et al., 2004). Work drive, which measures an individual's propensity to work hard and expend time and effort, was also hypothesized to directly influence college success. This expectation was based upon past research that higher grades are associated with spending extra time and effort when completing projects, working toward deadlines, being productive and achieving success (Lounsbury, Sundstrom et al., 2003; Ridgell & Lounsbury, 2004).

Career Success Models

It was hypothesized that personality affects motivation, drive and success at work, and as such, Openness, Conscientiousness, Extraversion, Agreeableness and Neuroticism were placed before work motivation, work drive and career success in the models. Based

on past research, it was expected that personality would affect the two components of career success, extrinsic and intrinsic success, differently. In regard to extrinsic career success, a meta-analysis indicated that Conscientiousness, Extraversion and Openness would positively affect, and Neuroticism and Agreeableness would negatively affect salary (Ng et al., 2005). In regard to intrinsic career success, the meta-analysis indicated that Conscientiousness, Extraversion, Agreeableness and Openness would positively, and Neuroticism would negatively, relate to feelings of job or career satisfaction. Work motivation was hypothesized to directly influence career success based upon past research that employee self-motivation, as evidenced by experiencing positive feelings when performing well and negative feelings when performing poorly, directly affects job satisfaction (Pool, 1997). Work motivation was also hypothesized to directly influence work drive based on past research that motivation for work is demonstrated through participation in work-related behaviors such as number of hours worked per week, number of hours of work desired, and degree of work centrality (Judge et al., 1995; Ng et al., 2005). Work drive, a measure of hard work and effort, was, in addition, expected to directly influence career success, as past research has found that individuals who work more hours and have a higher degree of work centrality tend to earn higher salaries and report more career satisfaction than others (Lounsbury et al., 2004; Ng et al., 2005).

CHAPTER 3

RESULTS

Collegiate Success

The hypothesis that personality affects the motivation, work drive and GPA of college students was examined using a structural equation modeling approach, which utilized the AMOS program. A number of indices were examined to determine the measure of fit. Chi-square, according to Keith (2006), is the most commonly reported measure of fit. It can be used with the degrees of freedom to determine whether or not the model provides a reasonable explanation of the data, that is, whether the model and the data are consistent with one another. A model that is consistent with the data will produce a chi-square that is *not* statistically significant. The chi-square for the Collegiate Success Model was 29.38, d.f. = 20, $p = .08$, which is not statistically significant. This suggests that it is plausible that the model may provide a good explanation of the relationships among the variables studied. The chi-square to degrees of freedom ratio is also thought to be indicative of an acceptable fit. Researchers have recommended using ratios from as low as 2 to 1 to as high as 5 to 1 to indicate a reasonable fit, however ratios closest to 1 are preferable (Arbuckle, 2005). The Collegiate Success Model has a chi-square to degrees of freedom ratio of 1.47, which suggests an acceptable fit with the data set. The comparative fit index (CFI) measures fit by comparing the fit of the model to that of the null or independence model; CFI values approach 1.00 are presumed to suggest a better fit (Keith, 2006). The CFI of the Collegiate Success Model is .91. Keith (2006) suggests that the root mean square error of approximation (RMSEA) may provide a more reasonable standard for evaluating models and that RMSEAs below .05 suggest a

good fit, below .08 a reasonable fit and above .10 a poor fit. The present model has an RMSEA of .09. Additionally, the Collegiate Success Model explains 24% of the outcome variable, GPA ($R^2 = .24$).

A correlation matrix of all the variables in the Collegiate Success Model is reported in Table 3. The path values in the model are reported in Table 4. Figure 4 provides the standardized estimates and Figure 5 is included to more clearly identify the significant paths. The paths provide a means with which to determine the direct, indirect and total effects on GPA. Significant direct effects on GPA are explained first, followed by a discussion of the other significant paths in the Collegiate Success Model. Significant indirect and total effects are then considered, followed by an examination of hypotheses.

Estimates were calculated for the direct effect of Race, Gender, SES, Neuroticism, Extraversion, Openness, Agreeableness, Conscientiousness, Academic Work Drive and Work Motivation on GPA. Direct effects were not calculated for the remaining predictors, College Year and Age, due to the researcher's hypothesis that those variables only indirectly affect GPA. Of the variables for which direct effects were calculated, two predictor variables, Work Motivation and Academic Work Drive, had significant direct effects on GPA ($\beta = .29, p < .05$ and $\beta = .32, p < .05$, respectively). These positive direct effects mean that students with more Work Motivation and Academic Work Drive had higher GPA's.

An additional six paths were significant in the Collegiate Success Model. The path from SES to Neuroticism was negative ($\beta = -.50, p < .05$) and suggests that an inverse relationship exists between the SES of students' family of origin and

Neuroticism. The path from Gender to Openness was negative ($\beta = -.33, p < .05$) which means that females in the sample were less open. The path from Gender to Agreeableness was positive ($\beta = .32, p < .05$) and indicates that female participants were more agreeable. The path from Gender to Neuroticism was positive ($\beta = .30, p < .05$) which means that female participants were more neurotic. The path from Gender to Conscientiousness was also positive ($\beta = .25, p < .05$) and indicates that female participants were more conscientious. The path from Conscientiousness to Academic Work Drive was positive ($\beta = .55, p < .001$) and means that more conscientious students had more Academic Work Drive.

The indirect effects of predictor variables are estimated as the product of their direct effects and can be interpreted similarly. Table 5 provides a summary of the total indirect effects produced by each variable in the Collegiate Success Model and Figure 4 can be used to calculate individual indirect effects. Significant indirect effects on GPA were determined when all of the mediating links between a predictor and GPA were significant (see Figure 5). Of the variables for which indirect effects were calculated, only Gender and Conscientiousness had significant indirect effects on GPA. The effect of Gender ($\beta = .04, p < .05$) appeared through the mediating variables Conscientiousness and Academic Work Drive and suggests that females were more successful in college because they are more conscientious and work harder in school. The effect of Conscientiousness appeared to be through Academic Work Drive ($\beta = .18, p < .05$) and suggests that greater levels of Conscientiousness lead individuals to work harder, thus leading to higher grades.

The total effects (Table 6) in the Collegiate Success Model were determined by summing all of the direct (Table 4) and indirect effects (Table 5). Significant total effects on GPA were found when either the direct or at least one indirect effect of a predictor variable was significant (see Figure 5). Four predictor variables had significant total effects on GPA, including Gender ($\beta = .16, p < .05$), Conscientiousness ($\beta = .13, p < .05$), Work Motivation ($\beta = .28, p < .05$) and Academic Work Drive ($\beta = .32, p < .05$). Even though Gender did not have a significant direct effect on GPA, its total effect, taking into account the direct effect and significant indirect effects through Conscientiousness and Work Drive, was significant. Thus, females had higher GPAs than males. Similarly, the positive total effect of Conscientiousness on GPA denotes that, combined, the direct and indirect effect of being more Conscientiousness was a higher GPA. The total effects of Work Motivation and Academic Work Drive were also significant. While Work Motivation had a significant direct effect on GPA ($\beta = .29$), since its effect on Work Drive was slightly negative ($\beta = -.03$), its total effect on GPA ($\beta = .28$) was slightly smaller than its direct effect. Overall, those with greater Work Drive and Work Motivation had higher grades.

Analyses of the Hypotheses

It was hypothesized that four of the Big Five traits, including Conscientiousness, Openness, Agreeableness and Neuroticism, would be important for predicting GPA. Certain demographic variables, including Gender, SES and Race, and two cognitive personality variables, Work Motivation and Academic Work Drive, were also expected to be significant predictors of GPA.

Hypothesis 1a stated that Conscientiousness, Openness and Agreeableness would positively predict GPA. The Collegiate Success Model supported one of these predictions; Conscientiousness did positively predict GPA. Its indirect effect through Academic Work Drive ($\beta = .18, p < .05$) and total effects ($\beta = .13, p < .05$) were significant. The remaining two predictions, that Openness and Agreeableness would positively predict GPA, are not supported.

Hypothesis 1b stated that Neuroticism would negatively predict GPA. The model did not provide support for this prediction; Neuroticism did not have a significant direct, indirect or total effect on GPA.

Hypothesis 1c stated that Academic Motivation would positively and Academic Work Drive would negatively predict GPA. This hypothesis was partially supported: Academic Motivation did positively predict GPA. Both the direct ($\beta = .29, p < .05$) and total ($\beta = .28, p < .05$) effects were significant. Academic Work Drive also predicted GPA. Contrary to expectation, however, its direct effect was also positive. As no indirect effects were calculated for Academic Work Drive, its total effect was equal to its direct effect ($\beta = .32, p < .05$) and both were significant.

Extrinsic Career Success

The hypothesis that personality affects the motivation, work drive and salary of workers was also examined using AMOS. Model fit indices were examined to determine the measure of fit for the Extrinsic Work Success Model. The chi-square for the model was 23.70, d.f. = 20, $p = .26$, which is not statistically significant. This suggests that the model may provide a good explanation of the relationships among the variables studied. The Extrinsic Work Success Model also has a chi-square to degrees of freedom ratio of

1.19, a CFI of .98 and an RMSEA of .04 each of which suggests an acceptable fit with the data set. The model, in addition, explains 25% of the outcome variable, Salary ($R^2 = .25$).

A correlation matrix of all the variables examined in the working sample, including those assessed in the Extrinsic Career Success Model, is reported in Table 7. The paths in the model are reported in Table 8. Figure 6 provides the standardized estimates and Figure 7 is included to more clearly identify the significant paths. The paths provide a means with which to determine the direct, indirect and total effects on Salary. It should be noted that direct effects on Salary were not calculated for one variable, SES, due to the researcher's hypothesis that SES only indirectly affects Salary. Below, significant direct effects on Salary are considered first, followed by a discussion of the other significant paths in the Extrinsic Career Success Model. Significant indirect and total effects are then reviewed, followed by an examination of hypotheses.

Estimates were calculated for the direct effect of Race, Gender, Highest Degree, GPA, Age, Neuroticism, Extraversion, Openness, Agreeableness, Conscientiousness, Work Drive and Work Motivation on Salary. Of the variables for which direct effects were calculated, two predictor variables, Highest Degree and Neuroticism, had significant direct effects on Salary ($\beta = .21, p < .05$ and $\beta = -.26, p < .05$, respectively). The positive direct effect of Highest Degree on Salary means that participants with more advanced degrees earned higher salaries. The negative direct effect of Neuroticism on Salary implies an inverse relationship between the variables; more neurotic participants earned smaller salaries.

An additional eleven paths were significant in the Extrinsic Career Success Model. The path from Race to Openness was positive ($\beta = .26, p < .05$) and suggests that minority participants are more open. The path from Race to Work Motivation was negative ($\beta = -.33, p < .001$) which means that minority participants in the sample tended to show less Work Motivation. The path from Gender to Neuroticism was positive ($\beta = .19, p < .05$) and indicates that female participants were more neurotic. The path from Highest Degree to Neuroticism was negative ($\beta = -.19, p < .05$) which means that participants with higher degrees were less neurotic. The path from Highest Degree to Extraversion was positive ($\beta = .22, p < .05$) and indicates that participants with higher degrees were more extraverted. The path from Age to Agreeableness was positive ($\beta = .20, p < .001$) and means that older participants were more agreeable. The path from SES to Work Drive was negative, ($\beta = -.27, p < .05$) suggesting that participants with families of origin with higher SES had lower Work Drive. The path from Neuroticism to Work Motivation was positive ($\beta = .37, p < .05$) and indicates that more neurotic participants had more Work Motivation. The path from Extraversion to Work Drive was positive ($\beta = .46, p < .001$) and suggests that more extraverted participants had more Work Drive. The path from Agreeableness to Work Drive was negative ($\beta = -.18, p < .05$) and means that more agreeable participants had lesser work drives. The path from Conscientiousness to Work Drive was positive ($\beta = .23, p < .05$) and indicates that more conscientious participants had greater work drives.

The Extrinsic Career Success Model was evaluated for significant indirect effects on Salary. Table 9 provides a summary of the total indirect effects produced by each variable in the Extrinsic Career Success Model and Figure 6 can be used to calculate

individual indirect effects. Indirect effects are considered significant when all of the mediating paths between a predictor and outcome variable are significant. Figure 7 illustrates the significant indirect effects on Salary. Of the variables for which indirect effects were calculated, only Gender and Highest Degree had significant indirect effects on Salary. The effect of Gender appeared through the mediating variable Neuroticism ($\beta = -.05, p < .05$) and suggests that females earned smaller salaries because they were more neurotic. Highest Degree had both a direct effect and an indirect effect through Neuroticism ($\beta = .05, p < .05$) and suggests that individuals with higher degrees earn more money, in part, because they were less neurotic.

The total effects (see Table 10) in the Extrinsic Career Success Model were determined by summing all of the direct (see Table 8) and indirect effects (see Table 9). Significant total effects on Salary were found when either the direct or at least one indirect effect of a predictor variable was significant (see Figure 7). Three predictor variables had significant total effects on Salary, including Gender ($\beta = -.26, p < .05$), Highest Degree ($\beta = .24, p < .05$) and Neuroticism ($\beta = -.24, p < .05$). Even though Gender did not have a significant direct effect on Salary, its total effect, taking into account the direct effect and significant indirect effects through Neuroticism, was significant. Thus, females had lower salaries than males. Highest Degree had both significant direct and indirect effects and its positive total effect on Salary suggests that, when taken together, the direct and indirect effect of having obtained a more advanced degree was a higher salary. The total effect of Neuroticism was also significant. The negative total effect of Neuroticism on Salary means that combined, the direct and indirect effect of having more Neuroticism was a lower salary.

Analyses of the Hypotheses

It was hypothesized that three of the Big Five traits, including Extraversion, Conscientiousness, and Neuroticism, would be most important for predicting Salary. Select demographic data, including gender, race, level of education and age, were also expected to be important predictors of Salary. One cognitive personality variable, Work Drive, was also expected to predict Salary. The specific hypotheses and results are reviewed.

Hypothesis 2a stated that Extraversion and Conscientiousness would positively predict Salary. The Extrinsic Career Success Model did not support these predictions. Neither Extraversion nor Conscientiousness showed significant direct, indirect or total effects on Salary.

Hypothesis 2b stated that Neuroticism would negatively predict Salary. The model supports this prediction; Neuroticism did negatively predict Salary and its direct ($\beta = -.26, p < .05$) and total ($\beta = -.24, p < .05$) effects on Salary were significant.

Hypothesis 2c stated that Work Drive would positively predict Salary. The Extrinsic Career Success Model did not support this prediction; Work Drive did not have significant direct, indirect or total effects on Salary.

Intrinsic Career Success

The hypothesis that personality affects the motivation, work drive and career satisfaction of workers was also examined using AMOS. Model fit indices were examined to determine the measure of fit for the Intrinsic Career Success Model. The chi-square for the model was 24.12, d.f. = 20, $p = .24$, which is not statistically significant and thus suggests that the model is a reasonable fit for the data. The model had a chi-

square to degrees of freedom ratio of 1.21, a CFI of .98 and an RMSEA of .04, each of which also suggest an acceptable fit with the data set. In addition, the Intrinsic Career Success Model explains 36% of the outcome variable, Career Satisfaction ($R^2 = .36$). In the present study, there was also a correlation between total scores on the Career Satisfaction Scale and the variable Salary of .32, which was significant at the .01 level.

A correlation matrix of all the variables examined in the working sample, including those assessed in the Intrinsic Career Success Model, is reported in Table 7. The paths in the model are reported in Table 11. Figure 8 provides the standardized estimates and Figure 9 is included to more clearly identify the significant paths. The paths provide a means with which to determine the direct, indirect and total effects on Career Satisfaction. It should be noted that direct effects on Career Satisfaction were not calculated for one variable, SES, due to the researcher's hypothesis that SES only indirectly affects Career Satisfaction. Significant direct effects on Career Satisfaction are considered first and are followed by a discussion of the other significant paths in the Intrinsic Career Success Model. Significant indirect and total effects are then considered, followed by an examination of hypotheses.

Estimates were calculated for the direct effect of Race, Gender, Highest Degree, GPA, Age, Neuroticism, Extraversion, Openness, Agreeableness, Conscientiousness, Work Drive and Work Motivation on Career Satisfaction. Of the variables for which direct effects were calculated, three predictor variables including, GPA, Neuroticism and Openness had significant direct effects on Career Satisfaction ($\beta = .37, p < .001$; $\beta = -.36, p < .05$ and $\beta = -.18, p < .05$, respectively). The positive direct effect of GPA suggests that those with higher collegiate GPA's had more Career Satisfaction. The negative

direct effect of Neuroticism suggests that an inverse relationship exists between the variables; participants who were more neurotic had less Career Satisfaction. A similar relationship existed between Openness and Career Satisfaction; in the model, when Openness increased, Career Satisfaction decreased.

An additional eleven paths, with effects on variables other than Career Satisfaction, were significant in the Intrinsic Career Success Model. These paths are the same as those listed above in the Extrinsic Career Success Model because they come before the outcome variables (Salary and Career Satisfaction).

The Intrinsic Career Success Model was evaluated for significant indirect effects on Career Satisfaction. Table 12 provides a summary of the total indirect effects produced by each variable in the Intrinsic Career Success Model and Figure 8 can be used to calculate individual indirect effects. Indirect effects are considered significant when all of the mediating paths between a predictor and outcome variable are significant. Figure 9 was used to determine significant indirect effects on Career Satisfaction. Of the variables for which indirect effects were calculated, Gender, Highest Degree and Race had significant indirect effects on Career Satisfaction. The effect of Gender appeared through the mediating variable Neuroticism ($\beta = -.07, p < .05$) and suggests that females were less satisfied with their careers because they were more neurotic. The effect of Highest Degree also appeared to be through Neuroticism ($\beta = .07, p < .05$) and suggests that individuals with higher degrees were more satisfied with their careers because they were less neurotic. The effect of Race appeared to be through Openness ($\beta = -.05, p < .05$) and suggests that non-Whites were less satisfied with their careers because they were more open.

The total effects (see Table 13) in the Intrinsic Career Success Model were determined by summing all of the direct (see Table 11) and indirect effects (see Table 12). Significant total effects on Career Satisfaction were found when either the direct or at least one indirect effect of a predictor variable was significant (see Figure 9). Six predictor variables had significant total effects on Career Satisfaction, including Gender ($\beta = -.07, p < .05$), Highest Degree ($\beta = .16, p < .05$), Race ($\beta = -.08, p < .05$), GPA ($\beta = .37, p < .001$), Neuroticism ($\beta = -.34, p < .05$), and Openness ($\beta = -.18, p < .05$). Even though Gender did not have a significant direct effect on Career Satisfaction, its total effect, taking into account the direct effect and significant indirect effect through Neuroticism, was significant. Thus, females had less career satisfaction than males. Similarly, the positive total effect of Highest Degree on Career Satisfaction denotes that, combined, the direct and indirect effect of having a higher degree was more career satisfaction. Likewise, the negative total effect of Race on Career Satisfaction suggests that, the direct and indirect effect of identifying as non-White was less career satisfaction. The total effect of GPA was also significant. All together, the direct and indirect effect of having a higher GPA was more career satisfaction. Neuroticism and Openness also had significant total effects on Career Satisfaction. The negative total effects of both variables imply that, combined, the direct and indirect effect of having more Neuroticism and more Openness was less career satisfaction.

Analyses of the Hypotheses

It was hypothesized that three of the Big Five traits, including Neuroticism, Agreeableness and Extraversion, would be most important for predicting Career Satisfaction. Select demographic data, including race, age, level of education and

collegiate GPA, were also expected to be important predictors of Career Satisfaction. Two cognitive personality variables, Work Motivation and Work Drive, were also expected to predict Career Satisfaction.

Hypothesis 3a stated that Agreeableness and Extraversion would positively predict

Career Satisfaction. The Intrinsic Career Success Model did not support these predictions. Neither Agreeableness nor Extraversion had significant direct, indirect or total effects on Career Satisfaction. Instead, it was a different personality variable, Openness, that was negatively related to Career Satisfaction.

Hypothesis 3b stated that Neuroticism would negatively predict Career Satisfaction. The model supported this prediction; Neuroticism did negatively predict Career Satisfaction and its direct ($\beta = -.36, p < .05$) and total ($\beta = -.34, p < .05$) effects on Career Satisfaction were significant.

Hypothesis 3c stated that Work Motivation, positively, and Work Drive, negatively, would predict Career Satisfaction. The Intrinsic Career Success Model did not support these predictions. Neither Work Motivation nor Work Drive had significant direct, indirect or total effects on Career Satisfaction.

Collegiate Success vs. Career Success

Similarities and differences between the predictors of collegiate and career success were also examined. A direct statistical comparison could not be performed, since the predictors in each of the models were not exactly the same. Thus, a comparison of the significant effects in each model was conducted. For example, if the paths from Neuroticism to GPA in the Collegiate Model and Neuroticism to Salary in the Extrinsic

Success Model were both significant, then Neuroticism would be considered to have a similar effect on both GPA and Salary.

Collegiate Success vs. Extrinsic Career Success

The first comparison utilized the Collegiate Success and Extrinsic Career Success Models to determine common and dissimilar predictors of GPA and Salary. Significant direct, indirect and total effects on GPA and Salary are evaluated below, followed by a review of the specific hypotheses.

A comparison of significant direct effects reveals that GPA and Salary are best predicted by dissimilar variables. Work Motivation ($\beta = .29, p < .05$) and Academic Work Drive ($\beta = .32, p < .05$) had significant direct effects on GPA, whereas Highest Degree ($\beta = .21, p < .05$) and Neuroticism ($\beta = -.26, p < .05$) had significant direct effects on Salary.

Indirect effects on GPA and Salary were also of interest. There were two significant indirect effects for GPA and for Salary. Indirect effects from both Gender and Conscientiousness significantly affected GPA. The effect of Gender appeared through the mediating variables Conscientiousness and Academic Work Drive ($\beta = .04, p < .05$) and the effect of Conscientiousness through Academic Work Drive ($\beta = .18, p < .05$). Indirect effects from both Gender and Highest Degree significantly affected Salary through the mediating variable Neuroticism ($\beta = -.05, p < .05$ and $\beta = .05, p < .05$, respectively).

Integrating the above findings, a comparison of significant total effects on GPA and Salary provides further support to the idea that these variables are best predicted by dissimilar variables. Gender ($\beta = .16, p < .05$), Conscientiousness ($\beta = .13, p < .05$),

Work Motivation ($\beta = .28, p < .05$) and Academic Work Drive ($\beta = .32, p < .05$) each had significant total effects on GPA, whereas Gender ($\beta = -.26, p < .05$), Highest Degree ($\beta = .24, p < .05$) and Neuroticism ($\beta = -.24, p < .05$), had significant total effects on Salary.

Analysis of the Hypotheses

The complete dissimilarity in important predictor variables for GPA and Salary is contrary to the hypotheses. It was expected that some of the significant predictors of GPA would be different from those that tend to predict Salary, but also, that some would be the same. Hypothesis 4a focused on the expectation of dissimilarity of two predictors, Openness and Extraversion. Figures 5 and 7 were used to evaluate the predictions, which are reviewed and discussed in turn below.

The first prediction stated that Openness would positively predict GPA, but not Salary. As expected, Openness did not predict Salary, but contrary to expectations, Openness also did not predict GPA. Openness had no significant direct, indirect or total effects on either outcome variable. Thus, in contrast to the prediction, its effect on the outcome variables was similar.

The second prediction stated that Extraversion was expected to positively predict Salary, but not GPA. As expected, Extraversion did not predict GPA, but contrary to expectations, Extraversion also did not predict Salary. Like Openness, Extraversion had no significant direct, indirect or total effects on either outcome variable. Thus, in contrast to the prediction, its effect on the outcome variables was similar.

Collegiate Success vs. Intrinsic Career Success

The second comparison utilized the Collegiate Success and Intrinsic Career Success Models to determine common and dissimilar predictors of GPA and Career Satisfaction. Significant direct, indirect and total effects on GPA and Career Satisfaction were evaluated (see Figures 5 and 9) followed by a review of the specific hypotheses.

A comparison of significant direct effects reveals that GPA and Career Satisfaction were best predicted by dissimilar variables. Work Motivation ($\beta = .29, p < .05$) and Academic Work Drive ($\beta = .32, p < .05$) had significant direct effects on GPA, while GPA ($\beta = .37, p < .05$), Neuroticism ($\beta = -.36, p < .05$) and Openness ($\beta = -.18, p < .05$) had significant direct effects on Career Satisfaction.

Indirect effects on GPA and Career Satisfaction were also evaluated. There were two significant indirect effects on GPA, through Gender and Conscientiousness, and three on Career Satisfaction, through Gender, Highest Degree and Race. As described above, the effect of Gender on GPA appeared through the mediating variables Conscientiousness and Academic Work Drive ($\beta = .04, p < .05$) and the effect of Conscientiousness was through Academic Work Drive ($\beta = .18, p < .05$). The effect of Gender on Career Satisfaction appeared through the mediating variable Neuroticism ($\beta = -.07, p < .05$), as did the effect of Highest Degree ($\beta = .07, p < .05$), while the effect of Race on Career Satisfaction appeared to be through Openness ($\beta = -.05, p < .05$).

A comparison of significant total effects on GPA and Career Satisfaction provides further support to the idea that these variables, like GPA and Salary, are also best predicted by dissimilar variables. Gender ($\beta = .16, p < .05$), Conscientiousness ($\beta = .13, p < .05$), Work Motivation ($\beta = .28, p < .05$) and Academic Work Drive ($\beta = .32, p < .05$)

each had significant total effects on GPA, whereas, Gender ($\beta = -.07, p < .05$), Highest Degree ($\beta = .16, p < .05$), Race ($\beta = -.08, p < .05$), GPA ($\beta = .37, p < .001$), Neuroticism ($\beta = -.34, p < .05$) and Openness ($\beta = -.18, p < .05$) had significant total effects on Career Satisfaction.

Analysis of the Hypotheses

These comparisons reveal, like those made above, strong contrasts in important predictors for GPA and Career Satisfaction. Like those expectations made for GPA and Salary, it was expected that some of the significant predictors of GPA will be the different from those that predict Career Satisfaction, but also, that some would be the same. Hypothesis 4b focused on the expectation of dissimilarity of three predictors, Openness, Conscientiousness and Extraversion.

The first prediction stated that Openness would positively predict GPA, but not Career Satisfaction. The results indicate that Openness did not positively predict Career Satisfaction. Openness, in fact, negatively predicted Career Satisfaction and had significant direct ($\beta = -.18, p < .05$) and total effects ($\beta = -.18, p < .05$). Contrary to expectations, however, Openness did not positively predict GPA. Openness, in fact, had no significant direct, indirect or total effects on GPA.

The second prediction stated that Conscientiousness would positively predict GPA, but not Career Satisfaction. The results support this prediction. As expected, Conscientiousness positively predicted GPA and specifically had significant indirect ($\beta = .18, p < .05$) and total effects ($\beta = .13, p < .05$). Conscientiousness, also as expected, did not positively predict Career Satisfaction and in fact had no significant effects on that outcome variable.

The third prediction stated that Extraversion would positively predict Career Satisfaction, but not GPA. Extraversion, as expected, did not positively predict GPA and, in fact, had no significant effect on that variable. Contrary to expectations, however, Extraversion did not positively predict Career Satisfaction and moreover, had no significant effects on that variable.

CHAPTER 4

DISCUSSION

In this chapter, a synopsis of the key findings will be followed by a discussion of how they fit into the existing literature. Implications for students, workers, schools, universities and employers will be discussed. Limitations of the study will be addressed and suggestions for further research in this area will be provided.

Review of Key Findings

The total effects of the Collegiate, Extrinsic Career and Intrinsic Career Success Models provide meaningful data regarding the variables that tend to be predictive of higher undergraduate GPA's and workers' salaries and career satisfaction. A discussion of each model's key predictors is provided below.

Collegiate Success Model

The Collegiate Success Model was designed and examined to determine how participants' demographics, personality, work motivation and work drive affect their GPA. The findings suggest that certain individual attributes are more important for predicting GPA than others. Higher GPA's are predicted when an individual is female, more conscientious, more motivated and/or more driven when approaching schoolwork. Some of these findings may be explained by the indirect effects observed in the model. For example, the reason females have higher GPA's than males appears to be that they are more conscientious and seem to focus it on schoolwork. More conscientious people, in general, may earn higher GPA's than less conscientious people. Having more conscientiousness seems to be associated with a propensity to have more drive to study and complete schoolwork and results in a higher GPA.

Overall, this pattern of results confirms those found in previous research; higher GPA's tend to be associated with being female (Betts & Morell, 1999; Chee et al., 2005; DeBerard et al., 2004; Lavin, 1965), being more conscientious (Lounsbury, Sundstrom et al., 2003; Musgrave-Marquart et al., 1997; Wolfe & Johnson, 1995), having more academic motivation (Farsides & Woodfield, 2003; Robbins et al., 2004) and more academic work drive (Lounsbury, Sundstrom et al., 2003; Ridgell & Lounsbury, 2004). The current study, however, is unique in that indirect effects on GPA were considered, which allows for a more clarity in our understanding.

It is not surprising that more conscientious people tend to earn higher GPA's than their less conscientious peers because they tend to be more self-disciplined, obedient, ambitious and hardworking than those who are less conscientious (McCrae & Costa, 2003). Individuals low in measures of Conscientiousness may even exhibit traits that inhibit academic achievement. They may, for example, be inclined towards a more easy going nature, be lackadaisical and less demanding of themselves and others (McCrae & Costa, 2003). The Collegiate Success Model used in the current study supports this interpretation. Participants who were more conscientious also reported more behaviors associated with studying and completing academic work. Those participants, in turn, earned higher GPA's.

Gender also had a significant relation to GPA. Female participants earned higher GPA's than male participants. Females' higher GPA's may be interpreted in a number of ways. The interpretation provided by the model suggests that females earn higher grades because they are more conscientious than males. More conscientious people, as noted above, have higher GPA's because they tend to be more focused on completing academic

work than less conscientious people. There may be alternative explanations, however, not provided by the model. Females, for example, tend to score higher than males in tasks of reading and writing (Nowell & Hedges, 1998). The participants used in the present study majored, or intended to major in, psychology, a field of study that tends to rely heavily on reading and writing. The model also rules out certain gender differences as indirect causes for sex-based differences in GPA. In the sample, gender significantly affected participant's level of Neuroticism, Openness, Agreeableness and Conscientiousness in their personality. Of these differences, only Conscientiousness had a significant effect on GPA.

A tendency to have more motivation and drive for completing academic tasks also had a significant positive effect on GPA. These results confirm those found in previous research regarding academic work motivation (Farsides & Woodfield, 2003; Komarraju & Karau, 2005; Robbins et al., 2004) and work drive (Lounsbury, Sundstrom et al., 2003; Ridgell & Lounsbury, 2004). It was expected, in line with past research, that more motivation would predict higher GPA's, but contrary to past research, that more work drive would predict lower GPA's. The latter hypothesis was made because it was expected that individuals with higher GPA's would have a natural propensity for academic tasks (e.g., have higher intelligence) and therefore would spend less time and effort studying and completing schoolwork than their peers with lesser GPA's. Although information regarding participants' intelligence (e.g., IQ) was not used in the present study, the study nevertheless fails to find support for the notion that successful students have some easy, innate ability to attain high grades. To the contrary, the most successful students, those with the highest GPA, may work the hardest.

Extrinsic Career Success Model

The Extrinsic Career Success Model, like the Collegiate Success Model, also examined participants' demographics, personality, work motivation and work drive. In this model, the variables were evaluated to determine their effect on participants' yearly salary. The results suggest that certain variables are more important for predicting yearly salary than others. Higher salaries are predicted when an individual is male, has obtained a higher educational degree and is less neurotic. The indirect effects observed in the model help to explain some of these findings. The model suggests, for example, that more neurotic people earn less money. Females in this sample tend to be more neurotic than males, and therefore, may earn less money. Likewise, individuals with more advanced degrees are less neurotic than their peers with lesser degrees and therefore tend to earn more money.

These results lend support to those found in previous research; higher salaries tend to be associated with being male, having a higher degree (Gattiker & Larwood, 1988; Jaskolka et al., 1985; Judge et al., 1995; Ng et al., 2005) and being less neurotic (Furnham & Zacherl, 1986; Ng et al., 2005). The Extrinsic Career Success Model also adds to the literature by considering indirect effects on salary. These effects, which may add to or change a predictor's effect on an outcome variable, allow for greater explanation of results.

As anticipated, less neurotic people tend to earn higher salaries than their more neurotic peers. This may be because they tend to possess more emotional stability and fewer disturbances in their thoughts and actions than those who are more neurotic. Individuals high in measures of Neuroticism may even exhibit traits that inhibit job

performance including a tendency to be worrisome, temperamental, emotional, vulnerable, self-conscious and self-pitying (McCrae & Costa, 2003). Individuals low in measures of Neuroticism tend to demonstrate traits that may actually boost their job performance including a tendency to be calm, even-tempered, unemotional, self-satisfied, comfortable and hardy (McCrae & Costa, 2003). It is very likely that employers desire and pay higher salaries to workers with high job performance and an ability to ‘check one’s emotional baggage at the door’ so to speak.

Gender, in addition to Neuroticism, also had a significant effect on Salary. Male participants earned higher salaries than female participants. The positive effect of being male on yearly salary may be interpreted in a number of ways. The interpretation provided by the model suggests that males earn higher salaries because they are less neurotic than females. Less neurotic people, as noted above, have higher salaries because they tend to be more emotionally stable. Again, there may be a number of alternative explanations, which involve variables that were not examined in this study. Males, for one, have historically earned higher salaries than females, even when performing the same job. Men, in addition, may be more likely than women to seek jobs that pay more because they feel more responsible for supporting a family. Men may also have fewer responsibilities at home, as women have traditionally fulfilled more care-taking roles; thus, men may have more time to devote to work.

Participants’ salary was also significantly affected by their highest educational degree. Those with more advanced degrees earned higher salaries. These results were expected; careers traditionally open to individuals with 4 year degrees in psychology, child, community or residential care pay less than careers that require advanced degrees,

such as psychologists, lawyers and professors. They also confirm those results found in previous occupational research (Gattiker & Larwood, 1988; Jaskolka et al., 1985; Judge et al., 1995; Ng et al., 2005). In addition to its direct effect on salary, the Extrinsic Career Success Model adds to the literature by suggesting that education may also have an indirect effect. It implies that one reason individuals with more advanced degrees earn more money is because they are less neurotic than their peers with lesser degrees. Less neurotic people earn more money. Of course there may be alternative explanations to explain why individuals with higher degrees earn more money. These individuals, for one, may have more professional networking connections than individuals with lesser degrees. A higher degree, in and of itself, may entitle its owner to more respect or even an appearance of authority, either of which may command a higher salary. The model, importantly, also rules out two explanations: first, that individual's with higher degrees earn more money because they have more motivation and second, that they earn more money because they have more work drive or a propensity to work hard to complete tasks. To explain, neither motivation nor work drive significantly affected salary; these results were contrary to the hypotheses and previous research (Judge et al., 1995; Ng et al., 2005). This finding may be specific to the types of careers entered into by psychology majors. Perhaps psychology majors face a more restricted range of possible jobs and salaries than do individuals with other majors. It is also possible that psychology majors typically accept jobs with little to no merit pay. For example, the discrepancy in salary between a psychologist working in a mental health clinic who puts forth little effort and a very hard-working colleague may be smaller than in other fields,

such as business, where motivation and effort may lead to big differences in both salary and advancement.

Intrinsic Career Success Model

The Intrinsic Career Success Model was designed and examined to determine how participants' demographics, personality, work motivation and work drive affect their Career Satisfaction. Similar to the two preceding models, the Intrinsic Career Success Model suggests that certain individual attributes are more important for predicting career satisfaction than others. Higher career satisfaction is predicted when an individual is male, has a more advanced educational degree, self identifies as being White, has a higher undergraduate GPA and has a personality that is less neurotic and less open. The indirect effects observed in the model may explain some of these findings. The model suggests, for example, that the reason males may have more career satisfaction than females is that they are less neurotic. Less neurotic people, in general, may have more career satisfaction than more neurotic people. Similarly, individuals with higher degrees may have more career satisfaction because they are less neurotic than individuals with lesser degrees. Indirect effects also suggest that non-White individuals may experience less satisfaction with their careers because they are more open than Whites. In this study, individuals with more Openness in their personality tended have less career satisfaction than those with less of those same traits.

These results do not altogether support or fail to support previous career satisfaction research. The results do support previous literature suggesting that Neuroticism is inversely related to career satisfaction, but are also contrary to the same set of literature, which suggests that Openness is also positively related to career

satisfaction (Bonzionelos, 2004; Judge et al., 1999; Seibert & Kraimer, 2001; Ng et al., 2005). The results regarding GPA are also contrary to those obtained in previous research (Poole, 1993), which suggested that GPA was inversely related to career satisfaction. In the present study, GPA had a significant positive effect on career satisfaction. It is possible that some of these contradictions are due to the restricted sample in the present study, which only polled psychology majors.

Less neurotic people, as predicted, tend to be more satisfied with their careers than their more neurotic peers. This makes sense because they tend to be more generally self-satisfied than those who are more neurotic (McCrae & Costa, 2003). Other propensities associated with less neurotic people, including calmness, even-temperedness, composure and hardiness may also contribute to an overall sense of life satisfaction that spills over into their careers. On the contrary, it is easy to see where tendencies often demonstrated by more neurotic people, including worrying, moodiness, emotional vulnerability, self-consciousness and self-pitying, may detract from an overall sense of life satisfaction including that experienced in one's career (McCrae & Costa, 2003).

Openness, in addition to Neuroticism, also had a significant effect on Career Satisfaction. Openness, a measure of receptivity to new ideas, experiences or approaches, was inversely related to Career Satisfaction in the sample. Participants with more Openness experienced less satisfaction with their careers than participants with less Openness. These results, which were not predicted, contradict those found in previous research (Bonzionelos, 2004; Judge et al., 1999; Ng et al., 2005; Seibert & Kraimer, 2001). It may be that those low in Openness, who prefer the familiar and practical, are

more satisfied because they would in fact be uncomfortable with anything different.

Along the same lines, those high in Openness, who prefer new experiences, may be more dissatisfied because they are longing for something new.

Gender also had a significant effect on Career Satisfaction; males tended to be more satisfied with their careers than females. The positive effect of being male on career satisfaction may be interpreted in a number of ways. The interpretation provided by the model suggests that males are more satisfied with their careers because they are less neurotic than females. Less neurotic people, as noted above, have more career satisfaction because they tend to be more self-satisfied. There are a number of other possible explanations for this result. Males, for one, may be more satisfied with their careers because they traditionally hold fewer out of work responsibilities than women. Women, whose additional responsibilities may include those of a caretaker, may be more dissatisfied with their careers if they believe that their job impedes upon their responsibilities as a wife and mother. Males also tend to earn higher salaries than females, even when performing the same job. Although salary was not considered as predictor of career satisfaction in this model, separate correlations did show that the two variables are related.

In addition to gender, another important demographic variable, race, also had a significant effect on Career Satisfaction. The results suggest that non-Whites tend to be less satisfied with their careers than Whites. There may be a number of reasons for this. The interpretation provided by the model suggests that non-Whites are less satisfied with their careers because they are more open than Whites. More open people, as noted above, may have less career satisfaction because they tend to desire new experiences.

This finding can also be explained as a result of variables not included in this model.

One clear alternative is that non-Whites have, historically, been targets for discrimination. Beliefs that one has been discriminated against in the workplace may add to one's career dissatisfaction.

Satisfaction with one's career, surprisingly, is positively related to undergraduate GPA. This is especially interesting because the present study also found that GPA does *not* predict salary. The overall results suggest that career satisfaction is not fully tied to salary. Maybe participants with higher GPA's are more satisfied because their careers are more interesting, challenging or more related to their education. There may also be a number of other variables, not accounted for in the model, that are associated with a tendency to achieve higher GPA's and have more career satisfaction. These variables may include intelligence or social support. It is important to consider, however, that this result may be specific only to psychology majors. Previous research has found results contrary to those suggested by the present study (Poole 1993). There, individuals with higher GPA's had less career satisfaction than individuals with lower GPA's. It could be possible then, that higher achieving psychology majors have lower expectations for their careers than students of other majors and thus, are more satisfied. Then again, maybe higher achieving psychology majors chose a career path suited to their abilities and interests and, therefore, were more satisfied than their peers with lower GPA's who may have chosen to study and work in the field of psychology despite its incompatibility with their skills.

The last variable in the Intrinsic Career Success Model to significantly affect career satisfaction is level of education. In the model, Highest Degree had a significant

positive effect on Career Satisfaction. Individuals who had obtained more advanced educational degrees reported more satisfaction with their careers than individuals who had lesser degrees. The model provides an explanation for this result in that it suggests that individuals with higher degrees are more satisfied with their careers because they are less neurotic than individuals with lesser degrees. As suggested above, it may be that less neurotic people experience more satisfaction with their careers because of their tendency to be more self-satisfied than more neurotic people. There are other explanations in addition to those provided by the model. It is likely, for one, that individuals with more education are afforded more selectivity in terms of their career. For example, psychology majors with advanced degrees may be working as professional psychologists, whereas those with terminal bachelors degrees may be working as staff members for residential facilities or child protective services, which are lower paid positions that tend to be more stressful. It is just as likely that individuals with higher degrees are treated with more courtesy and respect at work as a byproduct of their advanced education. It may also be that there are other factors, not considered in the model, which are associated with both individuals who tend to have higher degrees and those who tend to have more career satisfaction. These factors may be similar to those mentioned above related to GPA.

College Success Model vs. Career Success Models

One of the unique aspects of this study is that the models allow for a visual comparison of some of the individual differences that tend to predict success in college and in work. Interestingly, success in college is positively predicted by both work drive and work motivation, whereas success in work is not. This means that, in this sample, a strong desire to perform well and a tendency to exert effort is related to higher GPA's,

but not salary or career satisfaction. This suggests that desire to do well and hard work are rewarded in college, but not in the workplace. The Extrinsic and Intrinsic Career Success Models provide some plausible explanations for this finding, namely that variables, other than work motivation and work drive, may be more valued in the workplace. Working individuals may be more likely to be extrinsically rewarded (e.g., earn higher salaries) when they have obtained a higher degree and are less neurotic. Less Neuroticism also predicts more intrinsic reward (e.g., more career satisfaction), as does a higher undergraduate GPA and less Openness. What is interesting about these findings is the role that personality plays in career success, but not collegiate success, albeit the indirect effect of Conscientiousness through work drive. In regards to extrinsic career success, it may be that employers take aspects of Neuroticism (e.g., worrying) into consideration when determining salary. An alternative explanation may be that individuals with more neurotic behaviors avoid more stressful higher paying jobs. In regard to intrinsic career success, it may be that individuals are less satisfied with their careers because they are generally more neurotic. More open individuals may also be less satisfied with their careers because they may be longing for something new and different. Neuroticism and Openness may not play an active role in collegiate success because professors are unlikely to grade on the presence of neurotic behaviors or more liberal and open ideas. Alternatively, it is easy to see where very neurotic students might choose to take easier courses to lessen performance-related worry.

Implications for Education and Work

The results of this study have multiple implications for students and workers as well as colleges, universities and employers. The main purpose of this research was to uncover predictors of success at school and at work. It is important for students and educators, and employees and employers alike, to understand how individual attributes help or impede success as individuals move from the educational setting to the workplace. Some of the predictors studied, including certain demographics, personality, work drive and work motivation, contributed in similar ways to high GPA's, salary and career satisfaction, but some also contributed dissimilarly. Potential similarities are easy to applaud; the same traits that may help to make individuals successful at school may also help them to earn high salaries and experience more career satisfaction. In this respect, institutions of higher education have done well in terms of identifying individuals who have the potential to succeed not only in school, but also in life. Potential dissimilarities, however, should leave educators and their students and employers and employees with a pause for thought. In this respect, are institutions for higher education instilling in their students the characteristics necessary for success at work, in the real world? More importantly, can they? Either way, what does success in school (e.g., having obtained a high GPA) mean if it cannot translate to work? Should the current rating system for students in schools be modified to include a measure of success that tends to be predicted by the same variables that tend to predict career success? This study is clearly not the complete answer to these questions, but it does provide a glimpse of how demographics, personality, motivation and work drive differentiate those who are successful at school and work from those who are not.

With regard to higher education, GPA, the current success criteria for students in schools, is best predicted by gender, Conscientiousness, work drive and motivation. Females who are more conscientious and have more work drive and motivation for academics, will predictably have more success than their peers with different traits. The main implication of these findings, for colleges and universities seeking to help students do well in school, is that staff should be trying to motivate all students to develop high work motivation and drive. Professors can take time at the beginning of each semester to specifically explain course expectations to students. Students should understand the steps that must be taken to achieve each expectation. Written expectations, provided in course syllabi, along with examples, might achieve this goal. Role modeling is another way in which professors can both teach and motivate students. Professors can demonstrate importance of high work motivation, for example, by consistently maintaining their own self-performance standards. Role modeling can also be used to teach habits consistent with high work drive. Professors interacting with students in the classroom role model high work drive by being prepared, starting on time, returning graded tests and papers in a timely fashion and offering thoughtful feedback.

The overarching issue for students is that the factors that are predictive of their level of success at school are not entirely predictive of their level of success at work. This may be good news for the student who, based on the traditional measures of success in school, performs poorly. It is probably very bad news, however, for successful students, who likely expect their success in college to transfer to the work place. Given this, it appears important that colleges also help to prepare students to exhibit characteristics that lead to more success at work.

One way in which colleges and universities can help is by offering classes that teach workplace skills. A class designed for females to teach them how to negotiate salary and benefits like time off or flex time may help to increase their salary or career satisfaction if used upon entering the workforce. Another course might focus on controlling emotions in the workplace, as individuals high in Neuroticism tend to earn less money and have less satisfaction with their career. The use of modeling in a safe practice environment like a classroom could help individuals with these tendencies learn to have more control over their emotions at work. Such a class could also teach these students, prone to worrisome tendencies, how to handle deadlines, manage heavy workloads and prioritize. Colleges and universities may also consider implementing mandatory internships. Internships provide students with real on-the-job training with the security of still being a student. Finally, colleges and universities can educate their undergraduates on the reality of the advanced degree; findings of this study indicate that it yields both personal satisfaction and financial benefits.

The particular results gained from this study may have fewer direct implications for employers than they do for students, employees, colleges and universities. The results do suggest, however, that employers use measures other than GPA to determine their employee's salary. This makes sense for seasoned employees who may have been out of school for some time. More recent graduates and early career employees, however, may not have any other available measures with which to determine their probability of success. As such, there may be other ways in which colleges could rate students that would be more helpful to employers as well as job-seeking graduates. These ratings could be added to the traditional college transcript. Potential ratings may, for example

include number of extracurricular activities, campus leadership, tendency for volunteerism, cooperativeness in the classroom, ability to work in groups and degree of professionalism exhibited in the classroom.

Limitations

This study was carried out on a sample of current and graduated psychology majors. As such, the results of this study may not be representative of individuals with other majors. In addition, the workers' actual jobs were not examined, so it is not known how many of them are working in a psychology-related position or how the type of job one holds affects either salary or satisfaction. This was asked on the demographics sheet, but the respondents answered in a way that was too general to code. Participation, in addition, was voluntary. There may have been a number of different factors related to an individual's decision to participate and some of these factors may have been related to perceptions of success. The solicitation methodology used, especially the mail for the working sample, may not have reached all potential participants. Thus, generalizing the results of this research to all students and workers is cautioned.

The results may also be affected by the small sample sizes, particularly in the student sample. A larger sample size might have led to different results. Small samples, combined with a large number of variables studied, result in limited power, which may have decreased the likelihood of detecting some potential relationships among the variables. Because of this low power, a more cautious interpretation of the results was made. Thus, the Collegiate, Intrinsic and Extrinsic Career Success Models were

interpreted more conservatively, using only significance. The present results, therefore, do not take full advantage of the actual statistical analysis used.

Data collection methods used in the present study also tend to present limitations. Data, for one, was gathered using self-report. Paper and pencil measures are not always accurate as participants may misunderstand questions or provide socially desirable answers. The short version of the NEO was also used, which may omit some information regarding personality. In addition, one's salary is only one measure of extrinsic success at work, and there was no input from employers as to their level of satisfaction with the participants.

Directions of Future Research

It is, perhaps, helpful to understand how certain demographic variables, personality, work motivation and work drive affect success at school and at work, but clearly they are not the key to totally understanding what it takes to succeed. Instead, this study provides a good starting point for an area much in need of research. It also demonstrated that different factors tend to predict success at work and school.

Further research may involve a longitudinal study by following a group of students across time. This would allow for a more clear comparison of the traits that tend to predict success at school and at work. Any future success research should also consider including participants from other majors as well as categorizing the working participants by occupation. Researchers may also want to expand upon the variables studied. Factors such as number of extracurricular activities, time devoted to hobbies, time spent with family and friends, leadership, previous achievement, IQ, and SAT scores may add to variance of success explained by the models developed in the current study.

Conclusions

More people than ever before are choosing to attend college hoping to distinguish themselves in a very competitive job market. Many may view their college education as a four-year preparatory course for work. Problems often arise when, after graduation, individuals learn that the skills necessary to succeed in college and work are different. The frustration presented by this puzzle touches more than just the students who pay for it; it also affects employers, their bottom line, and potentially, their faith in the colleges and universities responsible for educating their employees.

So what can be done to mend the seeming inconsistency between what it takes to succeed in college and what it takes to succeed at work? Who is compelled to reconcile these inconsistencies? This researcher proposes, based on the idea that schools prepare individuals for work, that the responsibility lies first with colleges and universities. They might better prepare students for work by adding courses that teach workplace skills and better inform employers by adding to the traditional transcript, which at present, tends only to provide a list of coursework grades and cumulative GPA. These two important changes may begin to help reconcile the differences in what it takes to succeed in college and career.

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TABLES

Table 1

Descriptive Statistics and Frequencies for the Student Sample

	Frequency	M	SD
Mother's Education			
Did not finish high school	1		
High school or GED	13		
> high school, < 4-year degree	21		
College graduate	16		
Masters degree	12		
Doctoral degree	1		
Father's Education			
Did not finish high school	3		
High school or GED	21		
> high school, < 4-year degree	17		
College graduate	9		
Masters degree	8		
Doctoral degree	5		
Unknown	1		

Table 1 (continued)

Descriptive Statistics and Frequencies for the Student Sample

	Frequency	M	SD
GPA		3.10	0.55
Neuroticism		21.14	9.34
Extraversion		29.02	6.78
Openness		31.38	6.27
Agreeableness		32.30	6.25
Conscientiousness		31.55	6.58
Work Motivation		5.70	0.55
Work Drive		3.19	0.66

Note. Means for the NEO-FFI Adult Form S are: N = 19.07; E = 27.69; O = 27.03; A = 32.84; C = 34.57 (Costa & McCrae, 1992)

Table 2

Descriptive Statistics and Frequencies for the Working Sample

	Frequency	M	SD
Mother's Education			
Did not finish high school	9		
High school or GED	33		
> high school, < 4-year degree	27		
College graduate	18		
Masters degree	18		
Doctoral degree	2		
Father's Education			
Did not finish high school	5		
High school or GED	31		
> high school, < 4-year degree	22		
College graduate	21		
Masters degree	19		
Doctoral degree	9		

Table 2 (continued)

Descriptive Statistics and Frequencies for the Working Sample

	Frequency	M	SD
GPA		3.30	0.43
Neuroticism		17.99	8.91
Extraversion		28.86	6.70
Openness		30.79	5.75
Agreeableness		34.94	5.06
Conscientiousness		35.06	6.50
Work Motivation		5.77	0.70
Work Drive		3.27	0.72
Years in current position		3.57	2.91
Years spent working in current field		6.43	3.92
Salary		43096.34	25151.51
Career Satisfaction		3.44	0.80

Note. Means for the NEO-FFI Adult Form S are: N = 19.07; E = 27.69; O = 27.03; A = 32.84; C = 34.57 (Costa & McCrae, 1992)

Table 3

Correlation Matrix for the Student Sample

	Age	Gender	Race	College Year	Neuroticism	Extraversion	Openness	Agreeableness	Conscientiousness	Work Motivation	Work Drive	Father Ed.	Mother Ed.	GPA
Age	1													
Gender	.02	1												
Race	-.12	-.06	1											
College Year	.46 **	-.00	-.07	1										
Neuroticism	-.15	.19 *	.03	.05	1									
Extraversion	-.07	.14	-.09	-.03	-.40 **	1								
Openness	-.03	-.25 **	.09	-.03	-.06	.15 *	1							
Agreeableness	.24 **	.21 **	-.14	-.07	-.21 **	.25 **	.03	1						
Conscientiousness	.26 **	.20 **	-.02	-.03	-.35 **	.28 **	-.08	.26 **	1					
Work Motivation	-.03	.12	-.28 **	.18	.22 **	.08	-.06	.03	.08	1				
Work Drive	.13	.09	-.23	-.03	-.07	.35 **	-.04	.18	.52 **	.13	1			
Father Ed.	.03	-.12	-.06	.19	-.16 *	.14	.18 *	.14	-.02	.08	.10	1		
Mother Ed.	-.20 **	-.02	-.18 *	-.02	-.05	.15 *	.05	.03	-.09	.04	.24	.50 **	1	
GPA	.17 *	.15	-.15	.06	-.08	.04	.09	.25 **	.21 **	.16 *	.28 *	.02	.06	1

*p < .05; **p < .001

Table 4

Path Estimates for the Collegiate Success Model

	Path		Unstandardized	S.E.	Standardized
Race	→	Conscientiousness	-1.007	2.236	-0.056
Age	→	Agreeableness	-0.037	0.207	-0.021
Age	→	Conscientiousness	0.126	0.228	0.069
Gender	→	Conscientiousness	3.749*	1.898	0.249*
Gender	→	Agreeableness	4.399*	1.723	0.307*
Race	→	Agreeableness	-2.898	2.032	-0.170
Age	→	Openness	-0.147	0.212	-0.085
Race	→	Openness	-1.969	2.078	-0.115
Gender	→	Openness	-4.849*	1.762	-0.338*
Age	→	Extraversion	0.006	0.228	0.003
Gender	→	Extraversion	3.068	1.894	0.198
Race	→	Neuroticism	-4.421	3.165	-0.173
Gender	→	Neuroticism	6.073*	2.632	0.284*
Age	→	Neuroticism	0.280	0.317	0.109
SES	→	Neuroticism	-8.329*	3.440	-0.513*
SES	→	Extraversion	2.664	2.024	0.226
SES	→	Openness	3.045	2.212	0.280
SES	→	Agreeableness	1.632	1.824	0.150
SES	→	Conscientiousness	0.541	1.904	0.047
Race	→	Extraversion	-4.173	2.245	-0.225
Age	→	Work Motivation	-0.020	0.020	-0.129
Race	→	Work Motivation	-0.282	0.188	-0.186

Table 4 (continued)

Path Estimates for the Collegiate Success Model

	Path		Unstandardized	S.E.	Standardized
Conscientiousness	→	Work Motivation	0.014	0.012	0.160
Agreeableness	→	Work Motivation	0.014	0.012	0.159
Extraversion	→	Work Motivation	0.011	0.012	0.132
Gender	→	Work Motivation	-0.096	0.199	-0.075
Openness	→	Work Motivation	-0.005	0.012	-0.058
SES	→	Work Motivation	0.032	0.214	0.033
College Year	→	Work Motivation	0.147	0.089	0.215
Neuroticism	→	Work Motivation	0.019	0.011	0.316
Work Motivation	→	Academic Work Drive	-0.039	0.145	-0.032
Race	→	Academic Work Drive	-0.140	0.246	-0.077
Conscientiousness	→	Academic Work Drive	0.056**	0.014	0.553**
Agreeableness	→	Academic Work Drive	0.010	0.014	0.091
Extraversion	→	Academic Work Drive	0.008	0.015	0.087
Neuroticism	→	Academic Work Drive	0.019	0.013	0.265
Gender	→	Academic Work Drive	-0.258	0.243	-0.170
Age	→	Academic Work Drive	0.022	0.023	0.121
College Year	→	Academic Work Drive	-0.112	0.103	-0.137
SES	→	Academic Work Drive	0.375	0.264	0.326
Openness	→	Academic Work Drive	-0.010	0.014	-0.095
Conscientiousness	→	GPA	-0.007	0.014	-0.089
Agreeableness	→	GPA	0.003	0.012	0.035

Path Estimates for the Collegiate Success Model

	Path		Unstandardized	S.E.	Standardized
Openness	→	GPA	0.019	0.012	0.217
Extraversion	→	GPA	-0.021	0.012	-0.253
Work Motivation	→	GPA	0.284*	0.125	0.287*
Academic Work Drive	→	GPA	0.266*	0.131	0.321*
Gender	→	GPA	0.383	0.205	0.305
SES	→	GPA	-0.186	0.242	-0.195
Race	→	GPA	-0.197	0.194	-0.131
Neuroticism	→	GPA	-0.018	0.012	-0.306

*p < .05; **p < .001

Table 5

Standardized Indirect Effects for the Collegiate Success Model

	SES	Age	Gen	Race	Year	N	E	O	A	C	Motiv
Work Motivation	-.12	.05	.22	-.11							
Academic Work Drive	-.10	.08	.29	-.09	-.01	-.01	-.00	.00	-.01	-.01	
GPA	.21	-.02	-.14	-.06	.02	.17	.06	-.05	.07	.22	-.01

Note. Gen = Gender, Year = College Year, N = Neuroticism, E = Extraversion, O = Openness, A =

Agreeableness, C = Conscientiousness, Motiv = Work Motivation, Drive = Work Drive.

Note. Only paths for which there are indirect effects are listed. The values indicate the effects of the variable in the top row on the variable in the first column.

Table 6

Standardized Total Effects for the Collegiate Success Model

	SES	Age	Gen	Race	Year	N	E	O	A	C	Motiv	Drive
Father Ed.	.69											
Mother Ed.	.50											
Neuroticism	-.51	.11	.28	-.17								
Extraversion	.23	.00	.20	-.23								
Openness	.28	-.09	-.34	-.12								
Agreeableness	.15	-.02	.31	-.17								
Conscientious-ness	.05	.07	.25	-.06								
Work Motivation	-.08	-.08	.15	-.30	.22	.32	.13	-.06	.16	.16		
Academic Work Drive	.23	.20	.12	-.17	-.14	.26	.08	-.09	.09	.55	-.03	
GPA	.02	-.02	.16	-.19	.02	-.13	-.19	.17	.11	.13	.28	.32

Note. Gen = Gender, Year = College Year, N = Neuroticism, E = Extraversion, O = Openness, A =

Agreeableness, C = Conscientiousness, Motiv = Work Motivation, Drive = Work Drive.

Note. Only paths for which there are total effects are listed. The values indicate the effects of the variable in the top row on the variable in the first column.

Table 7

Correlation Matrix for the Working Sample

	Age	Race	Gender	Highest Degree	Neuroticism	Extraversion	Openness	Agreeableness	Conscientiousness	Work Motivation	Work Drive	GPA	Father Ed.	Mother Ed.	Salary	Career Satisfaction
Age	1															
Race	-.12	1														
Gender	.10	-.07	1													
Highest Degree	-.06	.07	-.04	1												
Neuroticism	-.09	.00	.18	-.18	1											
Extraversion	-.12	-.06	.08	.23 *	-.52 **	1										
Openness	.00	.21 *	-.22 *	.07	-.05	.15	1									
Agreeableness	.20 *	-.07	.13	-.05	-.17	.17	.16	1								
Conscientiousness	.15	-.00	.18	.12	-.35 **	.19 *	-.03	.23 *	1							
Work Motivation	-.14	-.31 **	.10	.03	.25 **	.02	-.05	-.08	.02	1						
Work Drive	-.07	.03	.25 **	.09	-.20 *	.43 **	-.02	-.07	.33 **	.12	1					
GPA	.09	-.10	.13	.16	-.03	.03	.14	.27 *	.20	.07	.08	1				
Father Ed.	-.07	-.12	-.21 *	.11	-.06	.11	.12	.10	-.07	.11	-.21 *	.01	1			
Mother Ed.	-.13	-.23 *	-.10	.04	.03	.13	.12	.04	-.17	.07	-.19 *	.08	.57 **	1		
Salary	-.01	-.10	-.24 *	.26 **	-.23 *	.07	-.07	-.16	-.08	.03	-.07	.09	.04	.08	1	
Career Satisfaction	-.03	-.09	-.03	.21 *	-.41 **	.31 **	-.08	.05	.11	-.00	.14	.34 **	.00	.09	.33 **	1

*p < .05; **p < .001

Table 8

Path Estimates for the Extrinsic Career Success Model

	Path		Unstandardized	S.E.	Standardized
Race	→	Conscientiousness	-0.584	2.333	-0.025
Highest Degree	→	Agreeableness	-0.301	0.693	-0.041
Age	→	Agreeableness	0.175*	0.084	0.203*
SES	→	Conscientiousness	-0.896	0.747	-0.145
Age	→	Conscientiousness	0.130	0.107	0.117
Highest Degree	→	Conscientiousness	1.402	0.883	0.150
Gender	→	Conscientiousness	2.158	1.475	0.141
SES	→	Agreeableness	0.708	0.586	0.147
Gender	→	Agreeableness	1.553	1.157	0.131
Race	→	Agreeableness	0.035	1.830	0.002
SES	→	Openness	1.126	0.661	0.205
Age	→	Openness	0.080	0.092	0.082
Highest Degree	→	Openness	0.300	0.766	0.036
Race	→	Openness	5.275*	2.025	0.256*
Gender	→	Openness	-2.318	1.279	-0.171
Age	→	Extraversion	-0.124	0.109	-0.108
SES	→	Extraversion	0.887	0.764	0.139
Race	→	Extraversion	-1.214	2.386	-0.051
Gender	→	Extraversion	1.927	1.509	0.122
Highest Degree	→	Extraversion	2.096*	0.903	0.217*
Race	→	Neuroticism	0.935	3.195	0.029
Gender	→	Neuroticism	4.072*	2.021	0.194*

Table 8 (continued)

Path Estimates for the Extrinsic Career Success Model

	Path		Unstandardized	S.E.	Standardized
Highest Degree	→	Neuroticism	-2.412*	1.210	-0.188*
Age	→	Neuroticism	-0.161	0.146	-0.106
SES	→	Neuroticism	0.347	1.007	0.041
Age	→	Work Motivation	-0.016	0.011	-0.135
SES	→	Work Motivation	0.009	0.077	0.013
Extraversion	→	Work Motivation	0.015	0.012	0.141
Neuroticism	→	Work Motivation	0.029**	0.009	0.369**
Conscientiousness	→	Work Motivation	0.017	0.011	0.156
Race	→	Work Motivation	-0.828**	0.238	-0.330**
Agreeableness	→	Work Motivation	-0.011	0.013	-0.080
Highest Degree	→	Work Motivation	0.059	0.090	0.059
Gender	→	Work Motivation	0.010	0.162	0.006
Openness	→	Work Motivation	0.003	0.012	0.026
Work Motivation	→	Work Drive	0.101	0.090	0.099
Highest Degree	→	Work Drive	-0.023	0.084	-0.022
Race	→	Work Drive	0.022	0.234	0.008
SES	→	Work Drive	-0.185*	0.078	-0.271*
Gender	→	Work Drive	0.238	0.150	0.141
Conscientiousness	→	Work Drive	0.026*	0.010	0.232*
Agreeableness	→	Work Drive	-0.025*	0.012	-0.179*
Extraversion	→	Work Drive	0.049**	0.011	0.461**
Neuroticism	→	Work Drive	0.002	0.009	0.030
Openness	→	Work Drive	0.004	0.011	0.029
Age	→	Work Drive	-0.006	0.010	-0.046

Table 8 (continued)

Path Estimates for the Extrinsic Career Success Model

	Path		Unstandardized	S.E.	Standardized
Conscientiousness	→	Salary	-475.678	395.532	-0.122
Agreeableness	→	Salary	-819.835	478.196	-0.163
Openness	→	Salary	-484.688	412.576	-0.110
GPA	→	Salary	8077.040	5726.847	0.137
Extraversion	→	Salary	35.831	450.416	0.009
Work Motivation	→	Salary	2822.696	3539.213	0.078
Work Drive	→	Salary	-3079.464	3708.547	-0.087
Race	→	Salary	-6810.292	8698.929	-0.075
Gender	→	Salary	-10768.954	5925.771	-0.180
Highest Degree	→	Salary	7830.166*	3307.432	0.214*
Age	→	Salary	136.599	399.198	0.032
Neuroticism	→	Salary	-752.030*	338.772	-0.264*

*p < .05; **p < .001

Table 9

Standardized Indirect Effects for the Extrinsic Career Success Model

	SES	Age	Race	Gen	Degree	N	E	O	A	C	Motiv
Work Motivation	.01	-.05	.01	.10	-.01						
Work Drive	.01	-.08	-.05	.08	.14	.04	.01	.00	-.01	.02	
Salary	-.02	-.03	-.06	-.08	.03	.02	-.03	-.00	.01	-.01	-.01

Note. Gen = Gender, Degree = Highest Degree, N = Neuroticism, E = Extraversion, O = Openness, A = Agreeableness, C = Conscientiousness, Motiv = Work Motivation.

Note. Only paths for which there are indirect effects are listed. The values indicate the effects of the variable in the top row on the variable in the first column.

Table 10

Standardized Total Effects for the Extrinsic Career Success Model

	SES	Age	Race	Gen	Degree	N	E	O	A	C	Motiv	Drive	GPA
Father Ed.	.70												
Mother Ed.	.81												
Neuroticism	.04	-.11	.03	.19	-.19								
Extraversion	.14	-.11	-.05	.12	.22								
Openness	.21	.08	.26	-.17	.04								
Agreeableness	.15	.20	.00	.13	-.04								
Conscientiousness	-.15	.12	-.03	.14	.15								
Work Motivation	.02	-.19	-.32	.10	.05	.37	.14	.03	-.08	.16			
Work Drive	-.26	-.12	-.05	.22	.12	.07	.48	.03	-.19	.25	.10		
Salary	-.02	-.00	-.13	-.26	.24	-.24	-.02	-.11	-.15	-.13	.07	-.09	.14

Note. Gen = Gender, Degree = Highest Degree, N = Neuroticism, E = Extraversion, O = Openness, A = Agreeableness, C = Conscientiousness, Motiv = Work Motivation, Drive = Work Drive.

Note. Only paths for which there are total effects are listed. The values indicate the effects of the variable in the top row on the variable in the first column.

Table 11

Path Estimates for the Intrinsic Career Success Model

	Path		Unstandardized	S.E.	Standardized
Race	→	Conscientiousness	-0.587	2.333	-0.025
Highest Degree	→	Agreeableness	-0.300	0.693	-0.041
Age	→	Agreeableness	0.175*	0.084	0.203*
SES	→	Conscientiousness	-0.892	0.742	-0.145
Age	→	Conscientiousness	0.129	0.107	0.117
Highest Degree	→	Conscientiousness	1.401	0.883	0.150
Gender	→	Conscientiousness	2.162	1.474	0.141
SES	→	Agreeableness	0.702	0.582	0.146
Gender	→	Agreeableness	1.549	1.156	0.130
Race	→	Agreeableness	0.035	1.830	0.002
SES	→	Openness	1.125	0.657	0.206
Age	→	Openness	0.080	0.092	0.082
Highest Degree	→	Openness	0.302	0.766	0.036
Race	→	Openness	5.281*	2.024	0.256*
Gender	→	Openness	-2.321	1.278	-0.172
Age	→	Extraversion	-0.123	0.109	-0.108
SES	→	Extraversion	0.885	0.758	0.139
Race	→	Extraversion	-1.210	2.386	-0.050
Gender	→	Extraversion	1.924	1.508	0.122
Highest Degree	→	Extraversion	2.098*	0.903	0.217*
Race	→	Neuroticism	0.934	3.194	0.029
Gender	→	Neuroticism	4.069*	2.019	0.194*

Table 11 (continued)

Path Estimates for the Intrinsic Career Success Model

	Path		Unstandardized	S.E.	Standardized
Highest Degree	→	Neuroticism	-2.411*	1.210	-0.188*
Age	→	Neuroticism	-0.161	0.146	-0.106
SES	→	Neuroticism	0.344	0.999	0.041
Age	→	Work Motivation	-0.016	0.011	-0.135
SES	→	Work Motivation	0.007	0.076	0.011
Extraversion	→	Work Motivation	0.015	0.012	0.141
Neuroticism	→	Work Motivation	0.029**	0.009	0.369**
Conscientiousness	→	Work Motivation	0.017	0.011	0.156
Race	→	Work Motivation	-0.829**	0.238	-0.331**
Agreeableness	→	Work Motivation	-0.011	0.013	-0.079
Highest Degree	→	Work Motivation	0.060	0.090	0.059
Gender	→	Work Motivation	0.010	0.162	0.006
Openness	→	Work Motivation	0.003	0.012	0.027
Work Motivation	→	Work Drive	0.101	0.090	0.098
Highest Degree	→	Work Drive	-0.023	0.084	-0.022
Race	→	Work Drive	0.022	0.234	0.008
SES	→	Work Drive	-0.184*	0.077	-0.270*
Gender	→	Work Drive	0.240	0.150	0.142
Conscientiousness	→	Work Drive	0.026*	0.010	0.232*
Agreeableness	→	Work Drive	-0.025*	0.012	-0.180*
Extraversion	→	Work Drive	0.049**	0.011	0.461**
Neuroticism	→	Work Drive	0.002	0.009	0.030
Openness	→	Work Drive	0.004	0.011	0.029

Table 11 (continued)

Path Estimates for the Intrinsic Career Success Model

	Path		Unstandardized	S.E.	Standardized
Age	→	Work Drive	-0.006	0.010	-0.046
Conscientiousness	→	Career Satisfaction	-0.014	0.012	-0.117
Agreeableness	→	Career Satisfaction	-0.008	0.014	-0.052
Openness	→	Career Satisfaction	-0.025*	0.012	-0.178*
GPA	→	Career Satisfaction	0.690**	0.163	0.370**
Extraversion	→	Career Satisfaction	0.016	0.013	0.135
Work Motivation	→	Career Satisfaction	0.042	0.105	0.037
Work Drive	→	Career Satisfaction	0.003	0.110	0.003
Race	→	Career Satisfaction	-0.012	0.258	-0.004
Gender	→	Career Satisfaction	-0.061	0.175	-0.032
Highest Degree	→	Career Satisfaction	0.091	0.098	0.078
Age	→	Career Satisfaction	-0.003	0.012	-0.022
Neuroticism	→	Career Satisfaction	-0.032*	0.010	-0.356*

*p < .05; **p < .001

Table 12

Standardized Indirect Effects for the Intrinsic Career Success Model

	SES	Age	Race	Gen	Degree	N	E	O	A	C
Work Motivation	.01	-.05	.01	.10	-.01					
Work Drive	.01	-.08	-.05	.08	.14	.04	.01	.00	-.01	.02
Career Satisfaction	-.02	-.02	-.07	-.04	.08	.01	.01	.00	-.00	.01

Note. Gen = Gender, Degree = Highest Degree, N = Neuroticism, E = Extraversion, O = Openness, A = Agreeableness, C = Conscientiousness.

Note. Only paths for which there are indirect effects are listed. The values indicate the effects of the variable in the top row on the variable in the first column.

Table 13

Standardized Total Effects for the Intrinsic Career Success Model

	SES	Age	Race	Gen	Degree	N	E	O	A	C	Motiv	Drive	GPA
Father Ed.	.70												
Mother Ed.	.82												
Neuroticism	.07	-.10	.12	.21	-.20								
Extraversion	.12	-.12	-.13	.11	.22								
Openness	.21	.07	.25	-.16	.04								
Agreeableness	.15	.20	-.00	.13	-.04								
Conscientiousness	-.15	.11	-.05	.14	.15								
Work Motivation	.02	-.18	-.32	.09	.05	.40	.13	.03	-.08	.16			
Work Drive	-.26	-.12	-.05	.22	.12	.07	.48	.02	-.19	.25	.11		
Career Satisfaction	-.04	-.05	-.15	-.08	.16	-.34	.14	-.17	-.06	-.11	.02	.01	.37

Note. Gen = Gender, Degree = Highest Degree, N = Neuroticism, E = Extraversion, O = Openness, A = Agreeableness, C = Conscientiousness, Motiv = Work Motivation, Drive = Work Drive.

Note. Only paths for which there are total effects are listed. The values indicate the effects of the variable in the top row on the variable in the first column.

FIGURES

Figure 1. Collegiate Success Model.

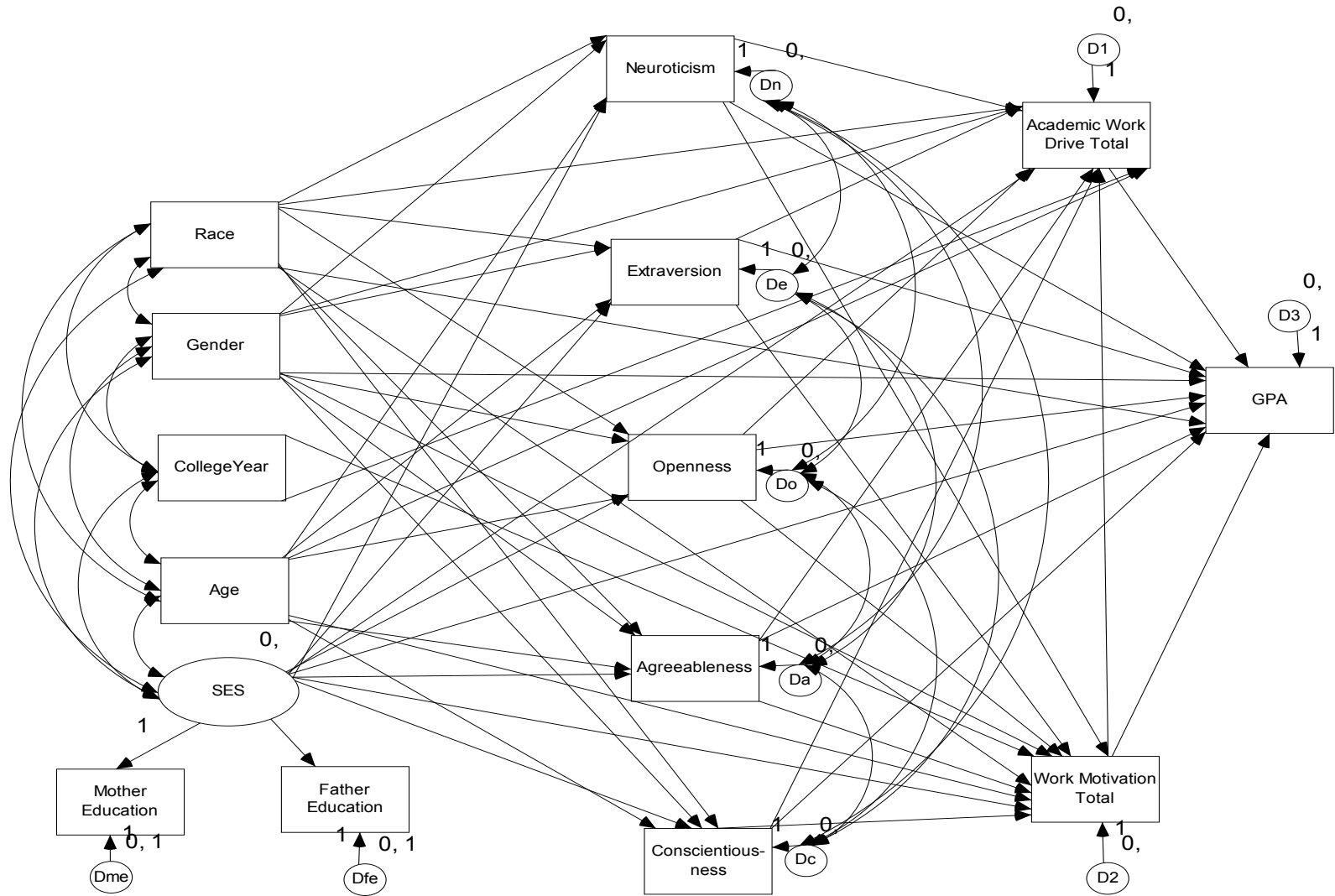


Figure 2. Extrinsic Career Success Model.

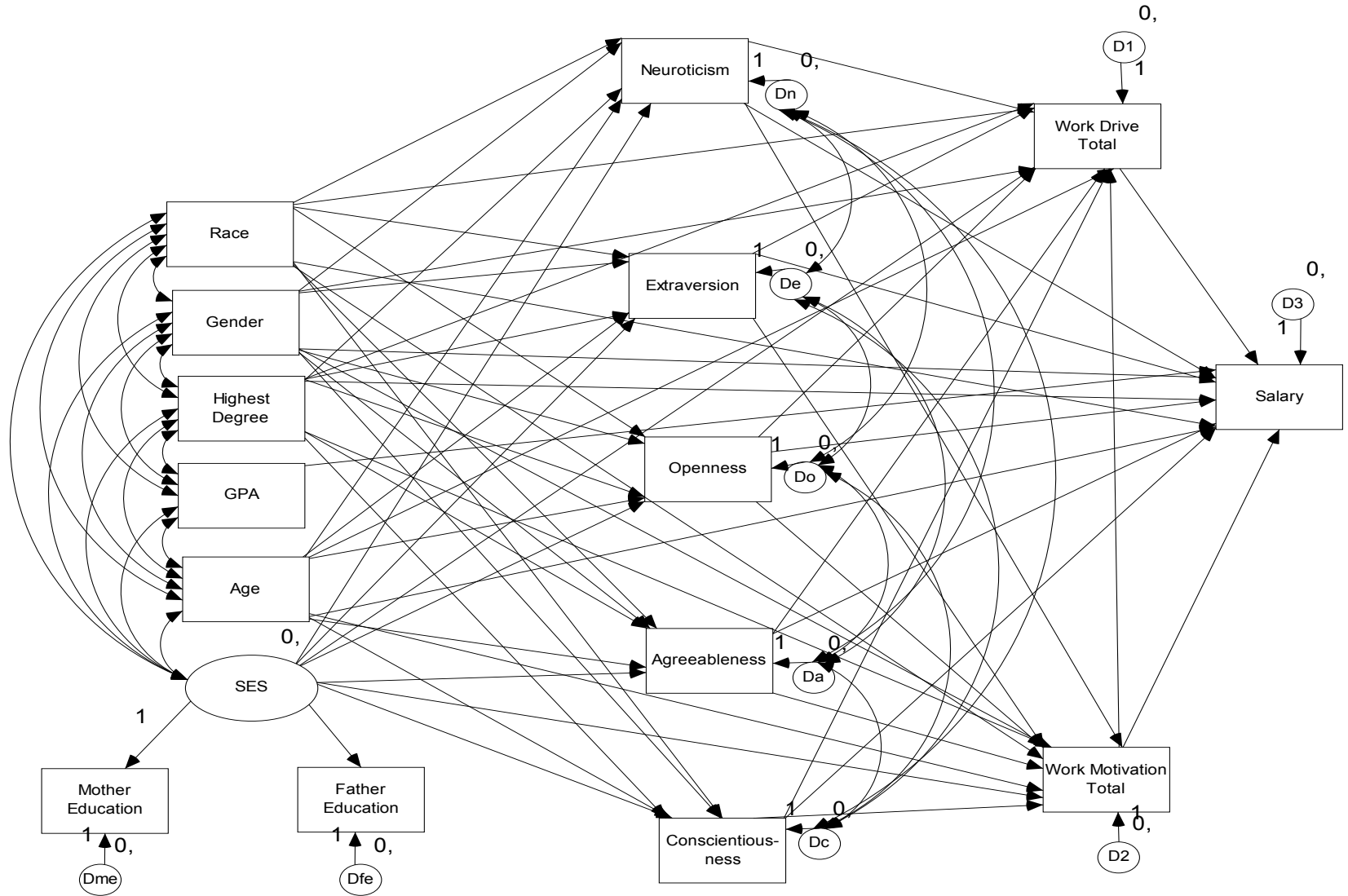


Figure 3. Intrinsic Career Success Model.

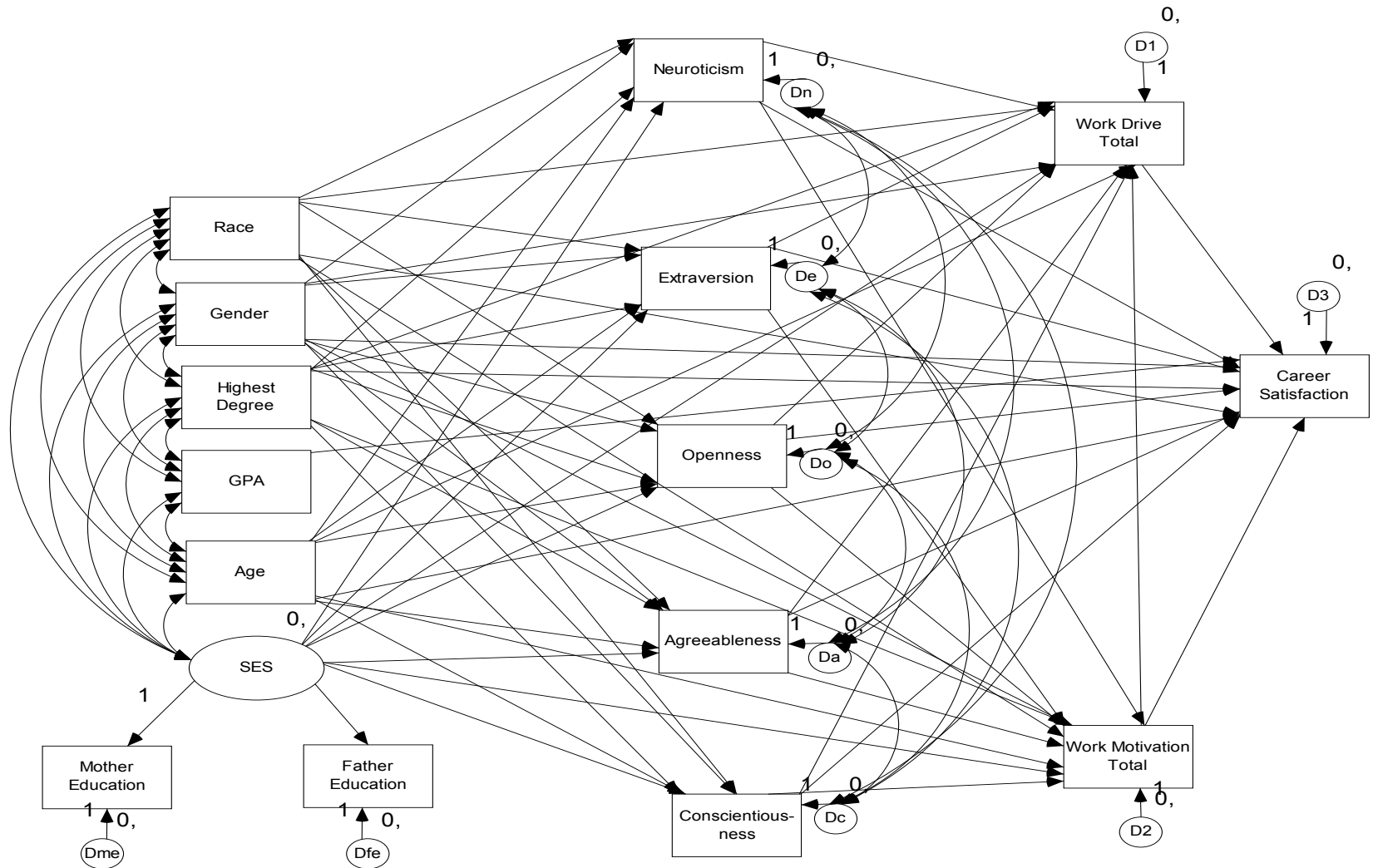


Figure 4. Collegiate Success Model (Standardized Estimates).

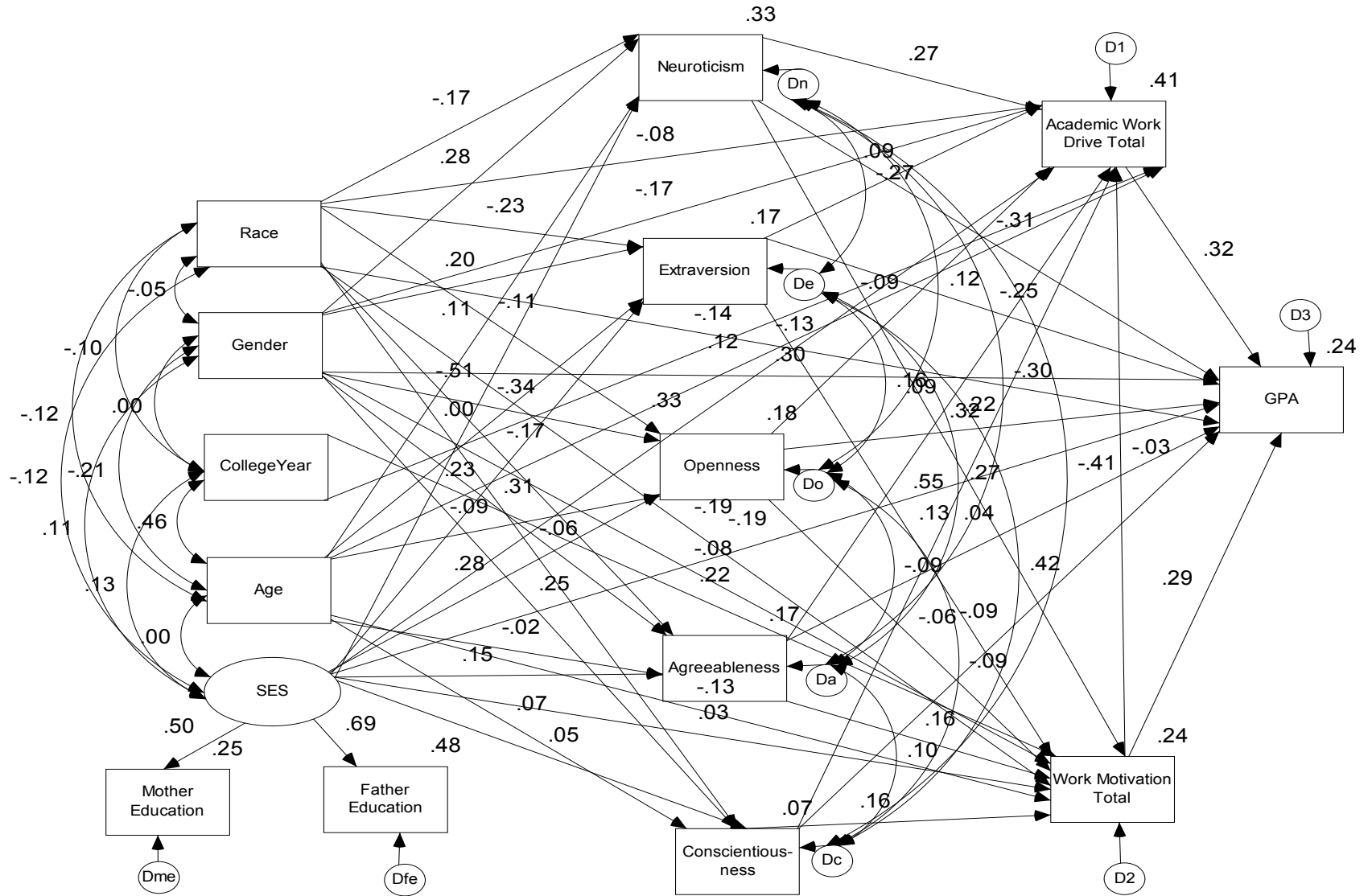


Figure 5. Collegiate Success Model (Significant Paths – Standardized Estimates).

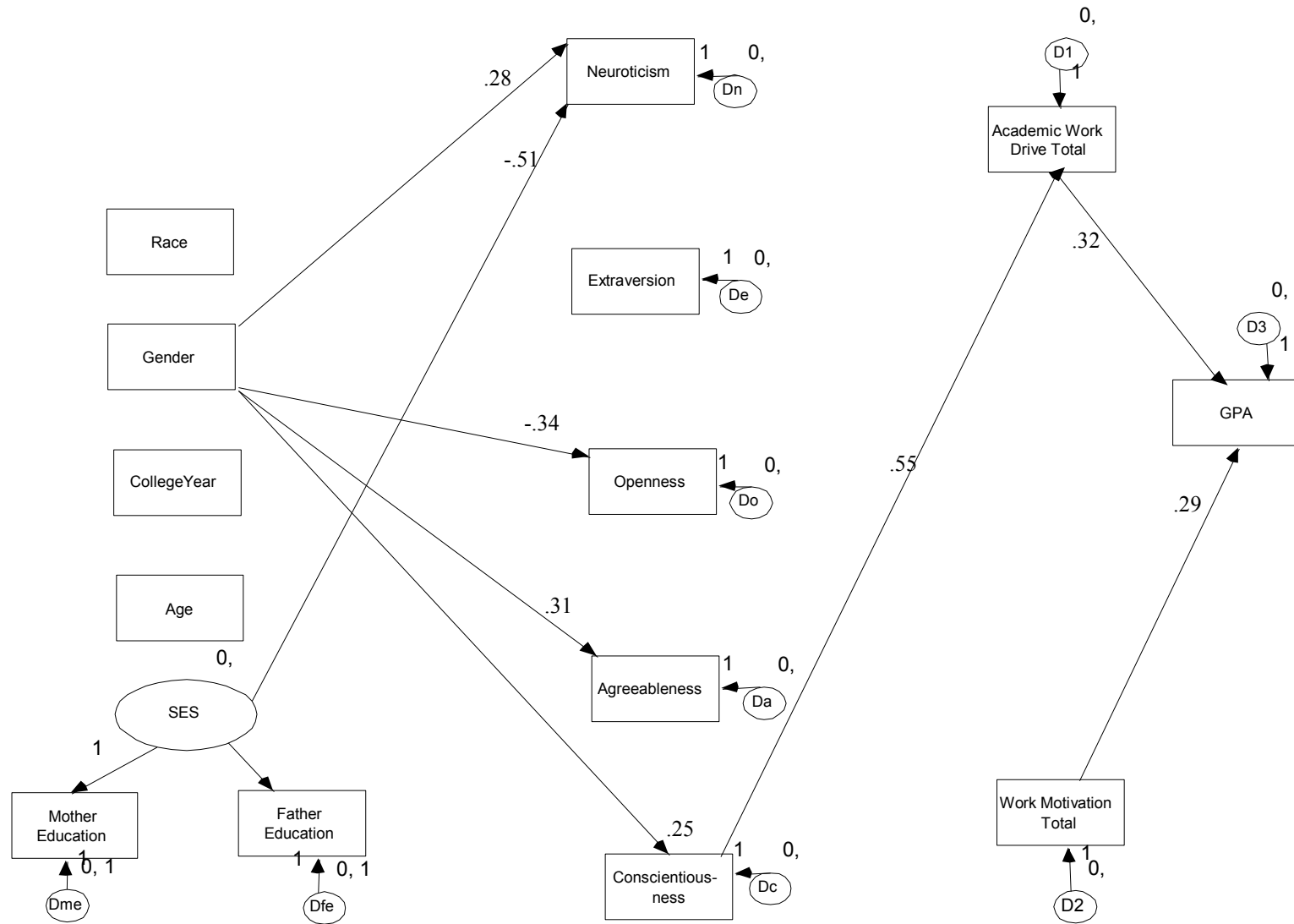


Figure 6. Extrinsic Career Success Model (Standardized Estimates).

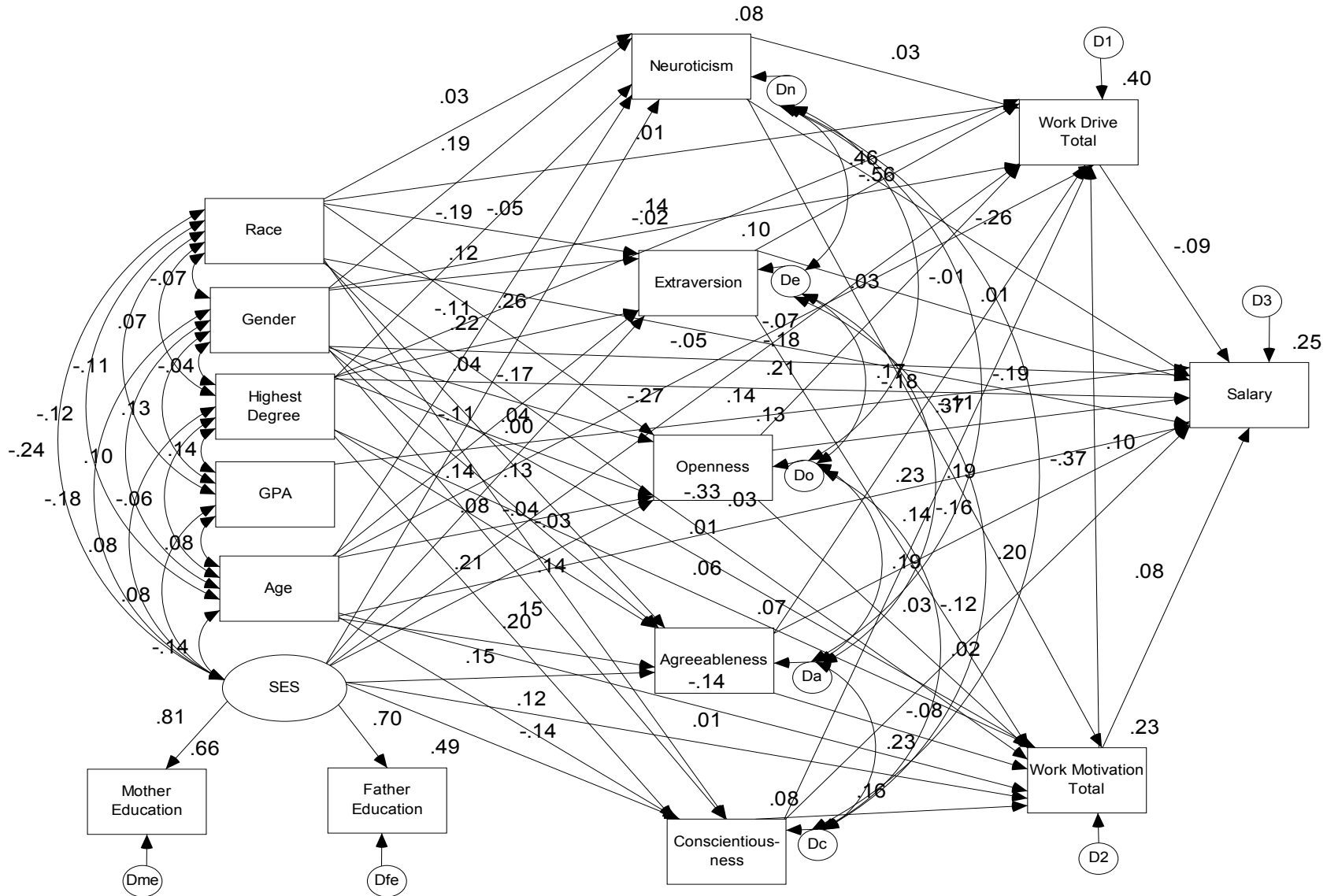


Figure 7. Extrinsic Career Success Model (Significant Paths – Standardized Estimates).

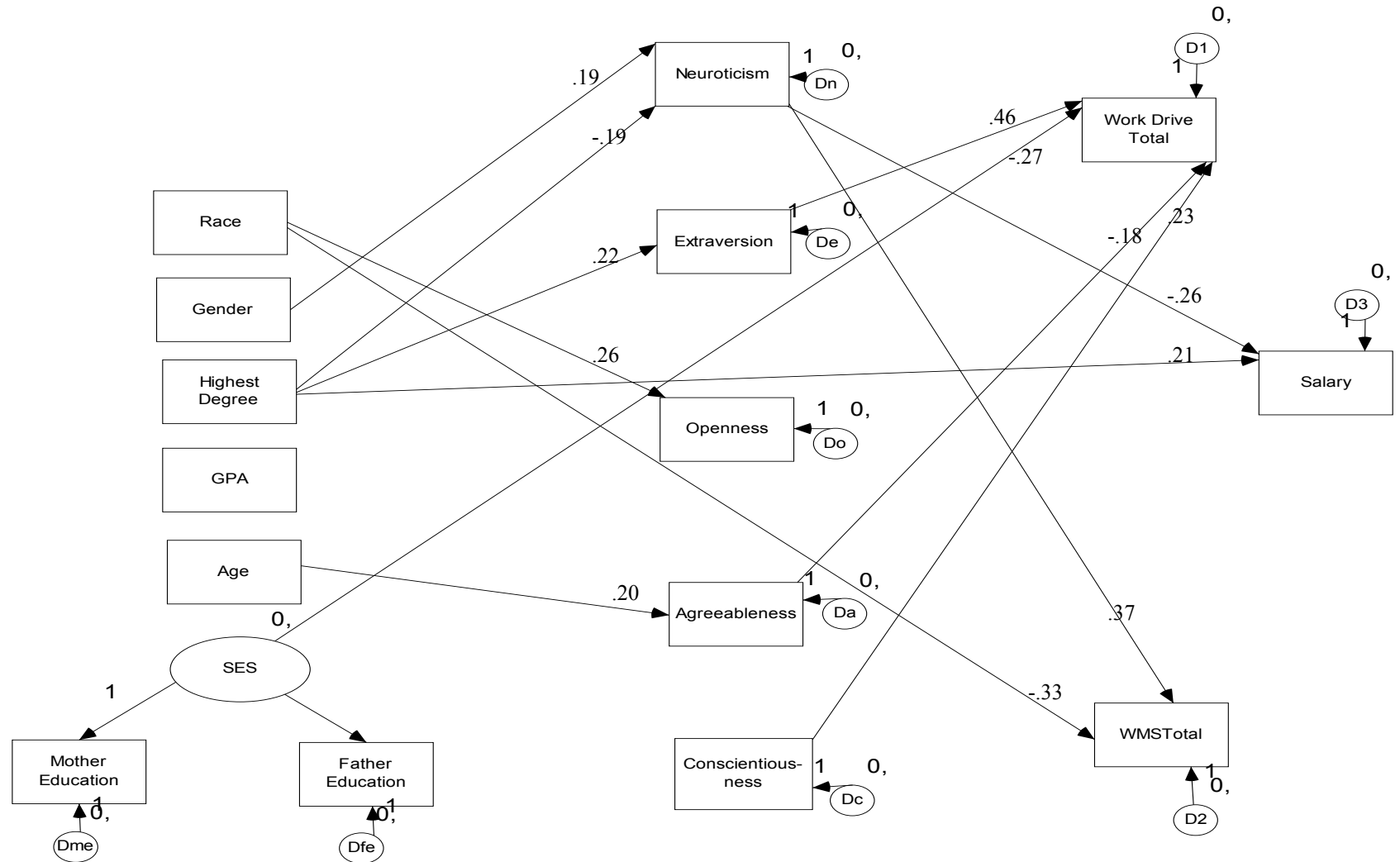


Figure 8. Intrinsic Career Success Model (Standardized Paths).

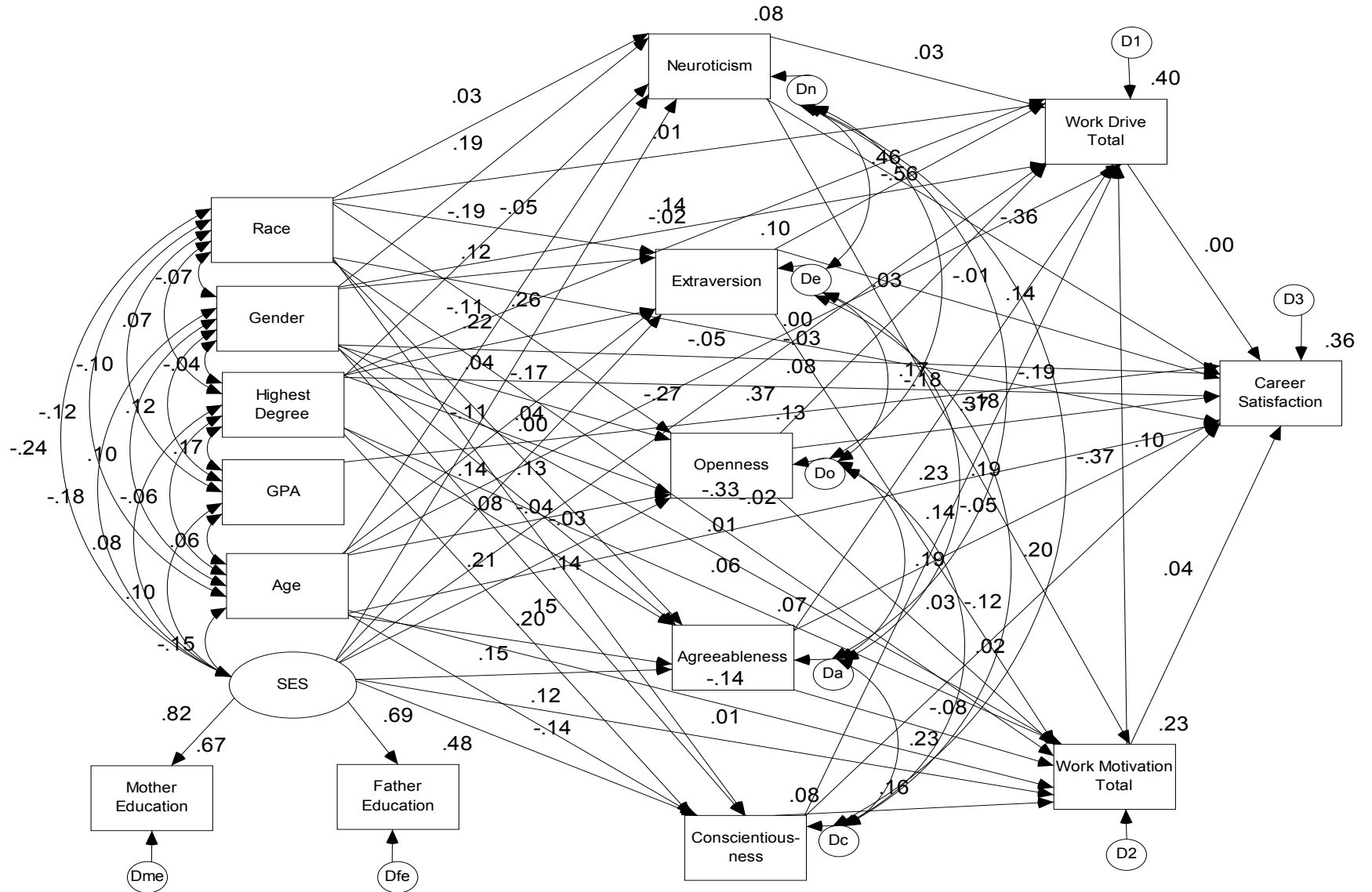
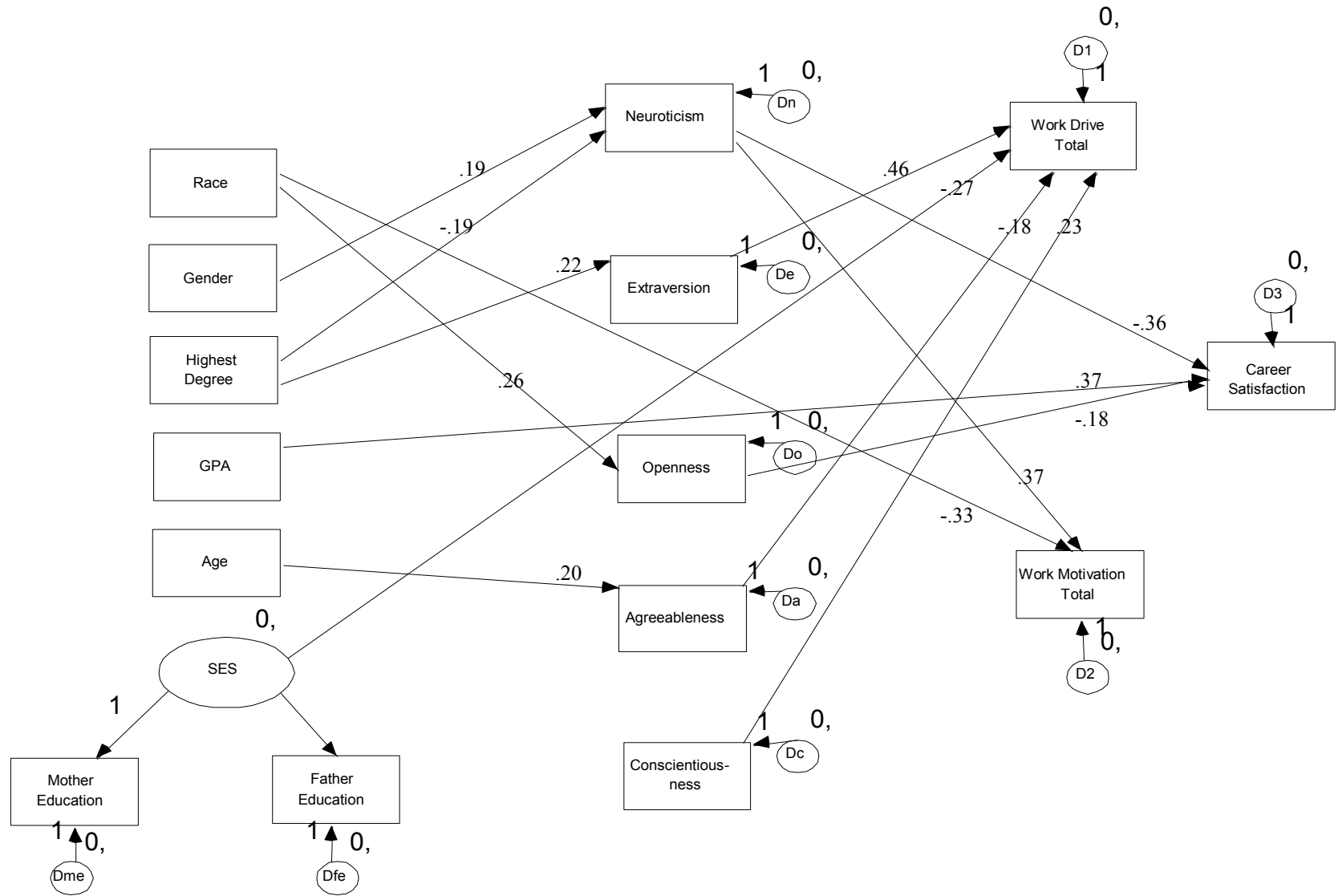


Figure 9. Intrinsic Career Success Model (Significant Paths – Standardized Estimates).



APPENDICES

Appendix A: Student Information Sheet

Student Participant Information

Age _____

Gender (check one) Male Female

Race / ethnicity (check one) Caucasian Black/African-American Asian
 Hispanic / Latino Other (specify) _____

Year in college (check one) sophomore junior senior

Marital status (check one) single long-term live-in relationship married
 separated divorced widow / widower

Please indicate your parents' highest educational level completed: (please check only one for each parent)

Mother

-
-
-
-
-
-

Father

- Did not finish high school
- High school graduate or GED
- Greater than high school, but less than 4-year college degree
- College graduate
- Master's degree or equivalent
- Ph.D., MD, JD or other doctoral degree

Please put a check mark next to each of your parents' occupation. If they hold more than one job, please check their primary occupation. If they are now retired, list their primary occupation when they were working.

Mother	Father
<input type="checkbox"/>	<input type="checkbox"/> CLERICAL, such as a bank teller, bookkeeper, secretary, typist, mail carrier, ticket agent...
<input type="checkbox"/>	<input type="checkbox"/> CRAFTSPERSON, such as a baker, mechanic, painter, plumber, telephone installer, carpenter...
<input type="checkbox"/>	<input type="checkbox"/> FARMER, FARM MANAGER...
<input type="checkbox"/>	<input type="checkbox"/> HOMEMAKER (without other job)...
<input type="checkbox"/>	<input type="checkbox"/> LABORER, such as a construction worker, car washer, sanitary worker, farm laborer...
<input type="checkbox"/>	<input type="checkbox"/> MANAGER, ADMINISTRATOR, such as a sales manager, office manager, school administrator, buyer, restaurant manager, government official...
<input type="checkbox"/>	<input type="checkbox"/> MILITARY, such as a career officer, enlisted man or woman in the Armed Forces...
<input type="checkbox"/>	<input type="checkbox"/> OPERATIVE, such as a meat cutter, assembler, machine operator, welder, taxicab, bus or truck driver...
<input type="checkbox"/>	<input type="checkbox"/> PROFESSIONAL, such as an accountant, artist, registered nurse, engineer, librarian, writer, social worker, actor, actress, athlete, politician, but not including school teacher...
<input type="checkbox"/>	<input type="checkbox"/> PROFESSIONAL, such as a clergyman, dentist, physician, lawyer, scientist, college teacher...
<input type="checkbox"/>	<input type="checkbox"/> PROPRIETOR/OWNER, such as an owner of a small business, contractor, restaurant owner...
<input type="checkbox"/>	<input type="checkbox"/> PROTECTIVE SERVICE, such as detective, police officer or guard, sheriff, fire fighter...
<input type="checkbox"/>	<input type="checkbox"/> SALES, such as a sales person, advertising or insurance agent, real estate broker...
<input type="checkbox"/>	<input type="checkbox"/> SCHOOL TEACHER, such as an elementary or secondary teacher...
<input type="checkbox"/>	<input type="checkbox"/> SERVICE, such as a barber, beautician, practical nurse, private household worker, janitor, waiter...
<input type="checkbox"/>	<input type="checkbox"/> TECHNICAL, such as draftsman, medical or dental technician, computer programmer...
<input type="checkbox"/>	<input type="checkbox"/> NEVER WORKED...
<input type="checkbox"/>	<input type="checkbox"/> DON'T KNOW...

Appendix B: Worker Information Sheet

Participant Information

Age _____

Gender (check one) Male Female

Race / ethnicity (check one) Caucasian Black/African-American Asian
 Hispanic / Latino Other (specify) _____

Highest degree obtained B.A. or B.S. M.A., M.S. Ph.D., JD, MD or equivalent

Title of highest degree obtained (i.e.. Ph.D. in American History) _____

Present Job

Title _____

Type of position _____

Type of agency/company _____

Years in current position _____

Current Yearly Salary _____

Career

Number of years spent working in your current field of work _____

Marital status (check one) single long-term live-in relationship married
 separated divorced widow / widower

Please indicate your parents' highest educational level completed: (please check only one for each parent)

Mother

Father

-
-
-
-
-
-
-

- Did not finish high school
- High school graduate or GED
- Greater than high school, but less than 4-year college degree
- College graduate
- Master's degree or equivalent
- Ph.D., MD, JD or other doctoral degree

Please put a check mark next to each of your parents' occupation. If they hold more than one job, please check their primary occupation. If they are now retired, list their primary occupation when they were working.

Mother	Father
<input type="checkbox"/>	<input type="checkbox"/> CLERICAL, such as a bank teller, bookkeeper, secretary, typist, mail carrier, ticket agent...
<input type="checkbox"/>	<input type="checkbox"/> CRAFTSPERSON, such as a baker, mechanic, painter, plumber, telephone installer, carpenter...
<input type="checkbox"/>	<input type="checkbox"/> FARMER, FARM MANAGER...
<input type="checkbox"/>	<input type="checkbox"/> HOMEMAKER (without other job)...
<input type="checkbox"/>	<input type="checkbox"/> LABORER, such as a construction worker, car washer, sanitary worker, farm laborer...
<input type="checkbox"/>	<input type="checkbox"/> MANAGER, ADMINISTRATOR, such as a sales manager, office manager, school administrator, buyer, restaurant manager, government official...
<input type="checkbox"/>	<input type="checkbox"/> MILITARY, such as a career officer, enlisted man or woman in the Armed Forces...
<input type="checkbox"/>	<input type="checkbox"/> OPERATIVE, such as a meat cutter, assembler, machine operator, welder, taxicab, bus or truck driver...
<input type="checkbox"/>	<input type="checkbox"/> PROFESSIONAL, such as an accountant, artist, registered nurse, engineer, librarian, writer, social worker, actor, actress, athlete, politician, but not including school teacher...
<input type="checkbox"/>	<input type="checkbox"/> PROFESSIONAL, such as a clergyman, dentist, physician, lawyer, scientist, college teacher...
<input type="checkbox"/>	<input type="checkbox"/> PROPRIETOR/OWNER, such as an owner of a small business, contractor, restaurant owner...
<input type="checkbox"/>	<input type="checkbox"/> PROTECTIVE SERVICE, such as detective, police officer or guard, sheriff, fire fighter...
<input type="checkbox"/>	<input type="checkbox"/> SALES, such as a sales person, advertising or insurance agent, real estate broker...
<input type="checkbox"/>	<input type="checkbox"/> SCHOOL TEACHER, such as an elementary or secondary teacher...
<input type="checkbox"/>	<input type="checkbox"/> SERVICE, such as a barber, beautician, practical nurse, private household worker, janitor, waiter...
<input type="checkbox"/>	<input type="checkbox"/> TECHNICAL, such as draftsman, medical or dental technician, computer programmer...
<input type="checkbox"/>	<input type="checkbox"/> NEVER WORKED...
<input type="checkbox"/>	<input type="checkbox"/> DON'T KNOW...

CURRICULUM VITAE

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Awarded for Excellence in Health Law by the American Bar Association, 2002
Who's Who, 2001