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An investigation of intelligence and personality in relation to career satisfaction

John W. Lounsbury ^{a,*}, Lucy W. Gibson ^b, Robert P. Steel ^c, Eric D. Sundstrom ^d,
James L. Loveland ^d

^a Department of Psychology, University of Tennessee, Knoxville, TN 37996-0900, USA

^b Resource Associates, Inc., Knoxville, TN 37920, USA

^c School of Management, University of Michigan, Dearborn, MI 48128, USA

^d Department of Psychology, University of Tennessee, Knoxville, TN 37996-0900, USA

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Abstract

This study examined intelligence and personality in relation to career and job satisfaction. Using a sample of 36 managers and 100 hourly employees of a utility company, the correlation between career satisfaction and intelligence was not significant for the total sample, but was significantly negative for hourly employees ($r = -0.30$, $p < 0.01$), and significantly positive for managers ($r = 0.30$, $p < 0.05$). The latter two correlations were significantly different from each other ($z = 3.31$, $p < 0.01$). Similar results were found for intelligence and job satisfaction. Several personality traits were significantly related to career and job satisfaction, but only *work drive* incrementally predicted career satisfaction above intelligence for hourly employees. Results were discussed in terms of possible theoretical frameworks as well as needs for further research.

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1. Introduction

The purpose of this study was to examine general intelligence and personality traits in relation to career satisfaction. Career satisfaction, which we conceptualize as the individual's satisfaction

* Corresponding author. Tel.: +1-865-577-6089; fax: +1-865-974-3330.

E-mail address: jlounsbury@aol.com (J.W. Lounsbury).

with his or her career as a whole, has been the subject of research on general career success (Judge, Cable, Boudreau, & Bretz, 1995; Judge, Higgins, Thoresen, & Barrick, 1999) as well as a criterion variable for psychological and organizational research in a wide range of occupational groups (see, e.g., Bird & Russell, 1986; Bozionelos, 1996; Burke, 2000; Nash, Norcross, & Prochaska, 1984; Nathan, Rouce, & Lubin, 1979; Richardsen, Mikkelsen, & Burke, 1997; Sturm, 2001; Walfish, Polifka, & Stenmark, 1985).

Recent research has examined personality variables in relation to career satisfaction. Based on a big five model of personality (cf. Costa & McCrae, 1985; De Raad, 2000; Wiggins & Trapnell, 1997), Boudreau, Boswell, and Judge (2001) found that neuroticism, agreeableness and conscientiousness were negatively related to career satisfaction in a US sample of executives; while neuroticism was significantly, negatively related to career satisfaction and extraversion was positively related to career satisfaction in a European sample of executives. Using a sample representing a variety of different occupations, Seibert and Kramer (2001) found that extraversion and neuroticism were positively and negatively related, respectively, to career satisfaction. Drawing on a sample of 5932 individuals going through career transition, Lounsbury et al. (2003) found that the personality traits of optimism, emotional stability, and work drive were consistently related to career satisfaction, collectively accounting for an average of 17% of the variance in career satisfaction across 14 occupational groups.

Although researchers have pursued personality–career satisfaction linkages, there is currently no work examining links between career satisfaction and general intelligence, even though the latter has been found to be one of the key individual difference predictors of important job outcomes such as performance. However, we located one study which examined the relationship of intelligence to a construct related to career satisfaction–job satisfaction. Based on a sample of 5423 individuals from the National Longitudinal Survey of Youth, Ganzach (1998) found that the relationship between intelligence and job satisfaction depended on job complexity. Although there was a non-significant relationship ($r = -0.02$) between job satisfaction and intelligence for the sample as whole, when job complexity was controlled for, the relationship between intelligence and job satisfaction was negative. Moreover, the negative effect of intelligence on job satisfaction tended to decrease as job complexity increased. Finally, Ganzach found a positive correlation between the mean intelligence of an occupational group and the within-occupation correlation between intelligence and job satisfaction, which he interpreted as “consistent with a moderating effect of job complexity on the relationship between intelligence and job satisfaction. . .” (p. 535).

The present study extends Ganzach’s findings into the realm of career satisfaction. Since job satisfaction is an element of career satisfaction (Boudreau et al., 2001), we investigated the relationship between intelligence and career satisfaction for two different occupational groups varying in organizational level—hourly/non-managerial and salaried/managerial—from the same company. Following, Ganzach (1998), we hypothesized that the correlation between intelligence and career satisfaction would be non-significant for the total sample, significantly negative for the hourly group, and significantly positive for the managerial group. We also hypothesized that the intelligence–career satisfaction correlations for the two groups would be significantly different from each other.

As a partial replication of Ganzach’s results, comparable predictions were made for job satisfaction. That is, we hypothesized that the intelligence–job satisfaction correlation would be non-

significant for the total sample, significantly negative for the hourly group, significantly positive for the managerial group, and that the intelligence–job satisfaction correlations for the two groups would be significantly different from each other.

Finally, since previous studies of individual difference variables and career satisfaction have failed to consider both personality traits and intelligence, we also examined the relative contribution of general intelligence and normal personality traits in accounting for variation in career satisfaction.

2. Method

2.1. Overview

The data for this study came from a sample of 136 employees of a utility company located in the southeastern United States, with 100 of these working in hourly positions and 36 in managerial positions. All data were originally collected as part of a career development program within the company.

2.2. Participants

Of the total sample, 71% were male; 29% were female. The mean age of participants was 33.26 ($SD = 8.47$). For the hourly group, 64% were in mechanical/operative positions (including line-man, wastewater technician, power dispatcher, safety testing, substation operator, meter reader, water plant operator, wastewater mechanic, pipefitter, troubleman, safety coordinator, gas builder, gas serviceman, and electrician), 20% were in administrative positions, and 16% were in customer service positions.

2.3. Measures

2.3.1. Job satisfaction

Job satisfaction was measured on a seven-item scale used by Lounsbury and Hoopes (1986), consisting of satisfaction with job facets, including coworkers, the work itself, pay and fringe benefits, supervision, promotion opportunities, training and development opportunities, as well as one item reflecting satisfaction with the job as a whole. The job satisfaction score was formed by summing the seven individual scores. Coefficient alpha for this scale = 0.84.

2.3.2. Career satisfaction

Career satisfaction was measured by seven items dealing with career progress and trajectory, career advancement, future career prospects, and career as a whole. Each item was placed on a seven-point scale with verbally opposing anchors at each end (e.g., “My career future looks very bright” versus “My career future looks pretty dim.”). Coefficient alpha for this scale = 0.85.

2.3.3. General intelligence

General intelligence was measured by a 44-item scale developed by Resource Associates (Lounsbury & Gibson, 2001) measuring verbal (13 items), numerical (17 items), and abstract reasoning (14 items). This is an untimed test. Each item has 4–5 answer choices with scoring as 1 = correct, 0 = incorrect. The total score represents an unweighted linear composite of all 44 items. Coefficient alpha for this scale = 0.90. Scores on this test correlate 0.80 with overall intelligence scores on the Otis–Lennon test of mental maturity—a group-administered test of general intelligence which has been extensively normed and researched (Anastasi & Urbina, 1997; Otis & Lennon, 1969).

2.3.4. Personality traits

Two standard normal personality inventories were used in this study—the 16 PF form A (Cattell, Eber, & Tatsuoka, 1970) and the Myers–Briggs type indicator form G (Myers & McCaulley, 1985). Sten scores for all 15 of the personality dimensions of the 16 PF were compiled (factor B—the reasoning factor was not included in this analysis) and normed scores for each of the four Myers–Briggs dimensions were computed.

In addition, a 12-item measure of *work drive* was included. This scale assesses a person's disposition to work long hours (including overtime) and an irregular schedule; greater investment of one's time and energy into job and career, and being motivated to extend oneself, if necessary, to finish projects, meet deadlines, be productive, and achieve job success. Lounsbury et al. (2003) found this work drive measure to be one of the best predictors of career satisfaction across a variety of occupational groups. In the present sample, coefficient alpha for the work drive scale = 0.84.

3. Results

Table 1 presents descriptive statistics for the sample as whole, the managerial/salary group, and the hourly/non-managerial group. Table 2 presents the intercorrelations among the intelligence and personality scales and the career and job satisfaction measures for the three samples. Levene's test for the equality of variances (Statistical Package for the Social Sciences, 2001) revealed no significant differences between the managerial and non-managerial/hourly groups in the variances for intelligence, career satisfaction, or job satisfaction. As predicted, the correlation between career satisfaction and intelligence was non-significant for the total sample ($r = -0.11$), significantly negative for the hourly group ($r = -0.30$, $p < 0.01$), and significantly positive for the managerial group ($r = 0.35$, $p < 0.01$). A similar pattern of results emerged for the intelligence–job satisfaction correlation, which was non-significant for the total sample ($r = -0.16$), significantly negative for the hourly group ($r = -0.35$, $p < 0.01$), significantly positive for the managerial group ($r = 0.29$, $p < 0.01$).

To address the question of whether the correlation between intelligence and career satisfaction was different for the managerial and hourly groups, a Fisher's z statistic (Guilford & Fruchter, 1978) was computed. This test revealed that the two correlations of 0.35 and -0.30 were significantly different from one another ($z = 3.30$, $p < 0.01$). Similar results were found when the correlations between intelligence and job satisfaction in the managerial and hourly samples ($r = 0.29$ and $r = -0.35$, respectively) were compared: $z = 3.31$, $p < 0.01$.

Table 1

Means and standard deviations for the study variables for the full sample, the hourly/non-managerial sample, and the managerial sample

	Full sample		Hourly/non-managerial		Managerial	
	Mean	SD	Mean	SD	Mean	SD
General intelligence	0.51	0.16	0.49	0.16	0.58	0.15
16 PF factor A outgoingness	5.09	2.16	5.10	2.13	5.08	2.26
16 PF factor C emotional stability	5.81	2.33	5.90	2.64	5.56	1.23
16 PF factor E dominance	5.84	5.36	5.69	6.21	6.25	1.86
16 PF factor F enthusiasm	6.60	6.13	6.66	7.12	6.47	2.03
16 PF factor G rule consciousness	7.06	6.45	7.25	7.54	6.58	1.59
16 PF factor H social boldness	6.37	4.92	6.41	5.65	6.28	2.11
16 PF factor I tender-mindedness	5.84	5.61	6.06	6.53	5.25	1.63
16 PF factor L vigilance	5.77	1.77	5.98	1.80	5.25	1.57
16 PF factor M abstractness	4.37	1.72	4.40	1.73	4.28	1.73
16 PF factor N shrewdness	5.78	1.92	6.05	1.81	5.08	2.03
16 PF factor O apprehensiveness	5.09	1.68	5.11	1.70	5.03	1.65
16 PF factor Q1 openness	4.81	1.78	4.91	1.91	4.56	1.40
16 PF factor Q2 self-reliance	5.82	2.09	5.76	2.13	5.97	2.01
16 PF factor Q3 precision	6.90	1.46	6.97	1.46	6.72	1.45
16 PF factor Q4 tension	5.21	1.71	5.25	1.79	5.11	1.53
Myers–Briggs introversion–extraversion	15.18	8.62	14.93	9.04	15.95	7.30
Myers–Briggs sensing–intuitive	14.29	14.96	13.09	13.63	17.62	18.08
Myers–Briggs thinking–feeling	12.08	12.55	11.24	10.67	14.42	16.80
Myers–Briggs judging–perceiving	11.71	14.40	9.50	11.89	17.79	18.73
Work drive	3.54	1.08	3.67	1.15	3.19	0.78
Career satisfaction	4.13	0.49	4.09	0.51	4.23	0.39
Job satisfaction	4.66	1.18	4.54	1.21	5.00	1.06

Note: For the full sample $n = 136$, for the hourly/non-managerial sample $n = 100$, for the managerial sample $n = 36$.

Several 16 PF personality traits were significantly related to career satisfaction. In the total sample these were: vigilance ($r = 0.20$, $p < 0.05$), apprehensiveness ($r = -0.21$, $p < 0.01$), and openness ($r = -0.20$, $p < 0.01$); in the hourly sample: openness ($r = -0.20$, $p < 0.01$); and in the managerial sample: enthusiasm ($r = 0.33$, $p < 0.01$), and self-reliance ($r = 0.37$, $p < 0.01$). Work drive was positively and significantly related to both career satisfaction and job satisfaction for the total sample ($r = 0.34$, $p < 0.01$ for career satisfaction and $r = 0.27$, $p < 0.01$ for job satisfaction) and the hourly sample, ($r = 0.26$, $p < 0.05$ for career satisfaction and $r = 0.22$, $p < 0.05$ for job satisfaction).

To examine the relative ability of personality and intelligence variables to account for variation in career satisfaction, a stepwise multiple regression was conducted for hourly and managerial samples with career satisfaction serving as the dependent variable and the personality and intelligence variables serving as predictors. For the hourly sample, the first variable to enter the equation was intelligence ($R^2 = 0.067$, $p < 0.01$) followed by work drive ($R^2 = 0.165$, $p < 0.01$; R^2 change = 0.08, $p < 0.014$). No other predictors entered the prediction equation at a significant level. For the managerial sample, only intelligence emerged as a significant predictor of career satisfaction ($R^2 = 0.121$, $p < 0.01$).

Table 2

Intercorrelations among intelligence and personality variables versus career and job satisfaction for the full sample, the hourly/non-managerial sample, and the managerial sample

	Full sample		Hourly/non-managerial		Managerial	
	Career satisfaction	Job satisfaction	Career satisfaction	Job satisfaction	Career satisfaction	Job satisfaction
General intelligence	-0.11	-0.16	-0.30**	-0.35**	0.35*	0.29
16 PF factor A outgoingness	0.18*	0.21**	0.17	0.23*	0.29	0.21
16 PF factor C emotional stability	0.09	0.16*	0.08	0.15	0.15	0.26
16 PF factor E dominance	0.09	0.09	0.06	0.08	0.21	0.05
16 PF factor F enthusiasm	0.11	0.11	0.11	0.11	0.33*	0.18
16 PF factor G rule consciousness	0.09	0.10	0.10	0.12	-0.05	-0.02
16 PF factor H social boldness	0.15	0.14	0.12	0.14	0.30	0.16
16 PF factor I tender-mindedness	0.03	0.09	0.04	0.09	0.22	0.14
16 PF factor L vigilance	0.20*	0.21**	0.17	0.20*	0.24	0.26
16 PF factor M abstractness	-0.09	-0.09	-0.15	-0.13	0.04	0.01
16 PF factor N shrewdness	-0.04	-0.04	-0.07	0.06	-0.30	-0.20
16 PF factor O apprehensiveness	-0.21**	-0.17*	-0.13	-0.13	-0.24	-0.12
16 PF factor Q1 openness	-0.20**	-0.28**	-0.20*	-0.23*	-0.21	-0.51**
16 PF factor Q2 self-reliance	-0.14	-0.16*	-0.08	-0.12	-0.37*	-0.30
16 PF factor Q3 precision	0.12	0.12	0.11	0.12	0.31	0.34*
16 PF factor Q4 tension	-0.16*	-0.17*	-0.11	-0.15	-0.17	-0.26
Myers-Briggs introversion-extraversion	0.06	0.13	0.02	0.10	0.23	0.24
Myers-Briggs sensing-intuitive	0.02	-0.01	0.01	-0.02	0.07	-0.06
Myers-Briggs thinking-feeling	-0.06	-0.10	-0.02	-0.09	0.23	0.24
Myers-Briggs judging-perceiving	0.09	-0.01	-0.01	-0.06	0.09	-0.07
Work drive	0.34**	0.27**	26*	0.22*	0.23	0.24
Career satisfaction	-	0.86**	-	0.86**	-	0.82**
Job satisfaction	0.86**	-	0.86**	-	0.82**	-

Note: For the full sample $n = 136$, for the hourly/non-managerial sample $n = 100$, for the managerial sample $n = 36$.

* $p < 0.05$.

** $p < 0.01$.

4. Discussion

Following Ganzach (1998), the present study indicates that the relationship between intelligence and career satisfaction is not a simple one. At least in the samples considered here, the sign and strength of the intelligence-career satisfaction relationship depended on job level, which is consistent with Ganzach's conclusion that there is a moderating effect of job complexity on the relationship between job satisfaction and intelligence. The present finding of a significant, negative relationship between intelligence and career satisfaction for hourly jobs is similar to Ganzach's finding of a negative correlation between intelligence and job satisfaction when job complexity was held constant. The present finding of a significant, positive relationship between intelligence and career satisfaction for managerial jobs is concordant with Diener's (1984) observation that intelligence would be expected to relate to overall measures of satisfaction and well-being "because it is a highly valued resource in this society." (p. 559).

How might these results be explained? Although we did not measure motivational variables or characteristics of the job and work environment, there are several possible theoretical frameworks for interpreting the present results, most of which basically involve the notion of person–work environment fit. For example, studies in a wide range of settings have found a positive relationship between achievement motivation and intelligence (e.g., Castejon & Vera-Munoz, 1996; Moran, 1982; Sewell, Farley, Manni, & Hunt, 1982; Verma, 1986). If managerial positions offer greater opportunities for achievement motivation, it could be that the managers with higher levels of intelligence are able to achieve more and, therefore, experience more career satisfaction. In contrast, in hourly jobs there may be more limited opportunity for expression of achievement motives, and individuals with higher levels of intelligence may feel more frustrated, and, thus, less satisfied with their careers. The differences in correlations between the two samples might have been affected by differences in variability of the variables; however, the respective variances in the managerial and hourly/non-managerial samples were not found to be significantly different for the intelligence or satisfaction measures.

Similar possible theoretical explanations might be found in terms of growth needs (Alderfer, 1969, 1972) or higher-order need satisfaction in positions with different job characteristics (e.g., Hackman & Oldham, 1975, 1976). Simply stated, hourly jobs may offer fewer opportunities for individuals with higher levels of intelligence to satisfy their presumably higher growth needs, which would lead to lower levels of satisfaction, for both job satisfaction and, over time, career satisfaction. Conversely, managerial jobs may offer more opportunities for satisfaction of higher-order or growth needs which individuals with higher levels of intelligence could take more advantage of, or actualize more fully. In a related vein, Lofquist and Dawis' (1969) model of adjustment to work might provide an explanatory framework in that satisfaction depends on opportunities for expression of one's abilities (including intelligence). Such opportunities may be differentially available in hourly and managerial jobs.

From the perspective of what has been termed the “environment” of careers (Collin, 1997), there are a number of societal trends which could place greater cognitive demands on individuals over the course of their careers—especially in higher-level jobs—and, thus, favor individuals with higher levels of intelligence. These include: increasing complexity of jobs and labor markets, technological change and innovation, globalization and international competition, greater conflict between and needs to reconcile the demands of work and nonwork, “delaying” and downsizing of organizations, more emphasis on continued education and lifelong learning, and changes in the psychological contract between employer and employee (for a review, see Storey, 2000). To the extent that individuals with higher levels of intelligence would be better able to meet these demands and successfully manage their careers, greater career satisfaction would be a logically related outcome.

Obviously, further research is needed to investigate these possibilities and provide a coherent theoretical account for the finding of differential relationships between intelligence and career satisfaction as a function of job level. Suffice it to say, the present findings, coupled with Ganzach's findings, indicate that intelligence–satisfaction relationships might be more fruitfully studied within, rather than between, occupational groups, or when job level or job complexity is controlled. In contrast, it is interesting to note that personality–career satisfaction relationships appear to have considerable generalizability across occupational groups (Lounsbury et al., 2003). Thus, unlike the job performance literature, which generally finds linear, monotonic relationships

for both intelligence and personality in relationship to performance across jobs, it may be that for career satisfaction, personality is linearly and monotonically related to satisfaction, but, in the case of intelligence, the direction of the relationship with career satisfaction differs as a function of job attributes, such as level or complexity.

The present findings also suggest that future investigations of individual difference variables in relation to career satisfaction should consider both intelligence, or cognitive ability, as well as personality variables. The findings of this study suggest that intelligence might be a stronger predictor of career satisfaction than personality traits. The personality results provide additional support for the significance of the work drive–career satisfaction relationship observed by Lounsbury et al. (2003).

There are a number of limitations to the present study. The sample size was relatively small. The influence of demographic characteristics—including sex, race, and tenure—was not investigated. For example, it would be interesting to investigate whether the present findings are similar for males and females. Also, only a single organizational setting was studied. Moreover, measures of perceived job characteristics were not examined, notably a measure of perceived job complexity, which was found by Ganzach (1998) to moderate intelligence–satisfaction relationships. In addition, we did not examine whether incumbents perceived the current job to be part of an integrated career pattern with potential advancement to higher-level positions or as a job without advancement potential.

Nevertheless, the present results suggest that a significant relationship between intelligence and career satisfaction may be observed when one examines results within job groups, and that the nature of this relationship may be different between job groups. Hopefully, the results of this study will spark research that addresses the replicability, generalizability, and theoretical underpinnings of the intelligence–career satisfaction relationship.

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