

Why Are There so Few Women in Information Technology?

Assessing the Role of Personality in Career Choices

By

Joshua L. Rosenbloom
University of Kansas and NBER

Ronald A. Ash
University of Kansas

Brandon Dupont
Western Washington University

LeAnne Coder
University of Kansas

Draft of 22 September 2006

We thank Donna Ginther and Joyce P. Jacobsen for their suggestions. This material is based upon work supported by the National Science Foundation under Grant No. 0204464. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

Why Are There so Few Women in Information Technology?

Assessing the Role of Personality in Career Choices

ABSTRACT

Despite increases in female labor force participation, women remain substantially under represented in most scientific and technical fields. The small number of women in engineering, physics, chemistry, computer science and other similar fields has variously been attributed to discrimination, differences in ability or choice. This paper uses a unique data set containing information on vocational interests to examine the determinants of entry in to Information Technology Occupations. We show that men and women differ systematically in their interests, and that these differences can account for an economically and statistically large fraction of the occupational gender gap.

I. Introduction

Despite the very substantial gains that women have made in the labor market over the past half-century, they remain substantially under represented across a range of technical and scientific fields. Although women make up nearly 47 percent of the labor force today, less than 20 percent of most engineering professions are female, just 27 percent of environmental scientists, 31 percent of chemists, and 27 percent of computer and mathematical occupations are female.¹ Given the importance of these technical fields in our modern economy, and the rapid expansion of employment opportunities in technical occupations, the dearth of women in these areas is puzzling from an academic perspective. It is also troubling from a policy perspective since it suggests that the

¹ These figures are derived from summary statistics drawn from the 2004 Current Population Survey downloaded from the Bureau of Labor Statistics. The number of women among all scientists and engineers has been increasing over time. Long (2001, p. 64) reports that the number of women scientists and engineers rose from about 7 percent of the workforce in 1973 to about 15 percent in 1995.

nation's technical workforce may be failing to fully capture the creative energies that are potentially available.²

The reasons why women have made such slow progress in gaining entry into science, math, engineering and technology remain unclear and in some cases quite controversial, a fact illustrated by the intense debate stimulated after Harvard President Larry Summers speculated at a January 2005 conference on the possibility that differences in the distribution of ability among men and women might play some role in the small numbers of women at the highest levels in science.³

The dearth of females in technical fields is part of a larger phenomenon of occupational segregation by gender. Fuchs (1988, p. 34-35) for example noted that in 1980 the Duncan Index of occupational dissimilarity implied that differences in occupational segregation were nearly twice as great by gender as they were by race, and had fallen much more slowly over the previous 20 years. Although calculations of the Duncan Index using 1990 and 2000 census data show a continued modest decline in gender segregation, they still indicate that it would be necessary for more than 50 percent of women to change jobs to achieve an equal distribution of men and women (Jacobsen Forthcoming, Table 6.4).

Explanations for these occupational differences can be grouped under three broad headings: (1) discrimination, (2) differences in ability, and (3) choice. Explanations

² The importance of the issue of workforce diversity from a policy perspective is reflected in the numerous programs offered by the National Science Foundation to increase female and minority participation in technical subjects. See Xie and Shauman (2003, pp. 4-6) for an elaboration of these points.

³ A transcript of Summers' remarks is available on the Harvard University web site <http://www.president.harvard.edu/speeches/2005/nber.html>; as is a subsequent letter to faculty responding to concerns raised following the initial remarks <http://www.president.harvard.edu/speeches/2005/facletter.html>.

based on discrimination presume that women face differential barriers to entry into technical fields that discourage their participation.⁴ In this view, if these barriers could be eliminated women and men would enter technical occupations in equal numbers.

Alternatively, the barriers that men and women face may be the same, but (as Larry Summers suggested) the distribution of abilities differs between men and women in ways that make men more productive in technical fields. In this view, occupational differences by gender reflect an efficient allocation of talent across different fields. The third explanation is that women may simply place a different weight on the attractiveness of technical occupation than do men. In this view, the relatively small number of women in technical fields reflects a competitive market response by workers with heterogeneous tastes to the differences in characteristics across jobs. This explanation for occupational choice is based on the neoclassical theory that workers weigh the benefits (both expected earnings and nonpecuniary returns) and the costs of a particular occupational choice and will invest in changing occupations only if that cost-benefit analysis works in their favor.⁵ Such an interpretation is consistent with the theoretical framework developed by Bowles, Gintis and Osborne (2001), which explains the existence of large interpersonal earnings differentials at any point in time to be as the consequence of disequilibrium rents caused by the slow response of individuals to market shocks. Within this framework the

⁴ Xie and Shauman (2003, p. 2) suggest organizing explanations within the framework of supply and demand factors. Differences in ability and preferences are both factors that operate on the supply side to depress entry of women into technical careers, while discrimination would be a demand-side factor reducing opportunities for women to enter technical fields.

⁵ One reason women may self-select into certain occupations is that they allow for more interrupted work lives, which females, on average, tend to prefer. Polachek (1981), for example, argued that women may enter certain occupations because the loss of earnings from expected absences over time will be minimized.

relationship between earnings and a wide range of (non-productive) personal characteristics reflects the association of these characteristics with the willingness or ability of individuals to respond to market shocks that produce these disequilibrium rents.

Developing an empirical strategy to disentangle these three alternatives is extremely challenging. Our goal in this paper is to advance the discussion with a case study of Information Technology (IT) occupations. Based on data we collected from a sample of IT professionals and a control group of comparable non-IT professionals, we find that much of the gender gap in IT occupations can be accounted for by differences in the distribution of vocational interests between men and women. Specifically, we find that after including a set of measures of occupational personality, gender is no longer a large or statistically significant factor determining the choice between IT and non-IT professions. We interpret this to mean that the under representation of women in IT reflects their choice in response to differences in actual or perceived job characteristics. This finding does not rule out the possibility that differences in ability or gender discrimination are also factors, but it does suggest that more attention needs to be given to how individuals make career choices.

In the next section we expand on the relevance and meaning of occupational personality for a model of career choice, and set our research within the larger context of recent research on the role of behavioral characteristics in the labor market. Next we turn to a description of our data. The fourth section discusses our empirical approach and presents the results of our estimates. The fifth section discusses the interpretation of our results.

II. Occupational Personality in the Labor Market

Recent research on labor market outcomes by labor economists, sociologists and psychologists has established the importance of a range of non-cognitive abilities as determinants of wages even after controlling for education, experience and cognitive skills.⁶ Heckman, Stixrud and Urzua (2006) for example, use both the Rotter Locus of Control scale and the Rosenberg Self-Esteem scale as measures of non-cognitive ability in regressions designed to explain observed schooling, salary, and variety of other outcomes. They find that non-cognitive skills are equally as important as cognitive skills in explaining labor market and behavioral outcomes. Coleman and DeLeire (2003) and Osborne Groves (2005) also find that the Rotter Locus of Control scale is a significant determinant of earnings. Kuhn and Weinberger (2005) show that another measure of non-cognitive ability, leadership, also has a significant effect on earnings.

Despite growing interest in the role of non-cognitive abilities as a determinant of wages, there has so far been little research by economists into the role that such characteristics might play in explaining patterns of occupational choice.⁷ Vocational psychologists have, however, developed a general framework for analyzing career choice founded on the concept of occupational personality.

Vocational counselors have long relied on interest inventories (the most prominent of which is the Strong Interest Inventory) to identify individual interests. In an influential series of publications, Holland (1959, 1985) developed a typology of work environments and personalities associated with each environment. According to

⁶ See Bowles, Gintis, and Osborne (2001) for a recent survey of this literature.

⁷ Jackson (2006) considers the impact of the Rotter Locus of Control scale on occupational attainment, but she concentrates on broad differences between blue- and white-collar employment, rather than on more narrowly defined occupational categories.

Holland both people and work environments can be classified by their position along six dimensions or General Occupational Themes. The nature of each theme can be summarized as follows:⁸

- The *Realistic* Theme or R, refers to a person's preference for activities that entail the explicit, ordered, or systematic manipulation of objects, tools, and machines. Realistic types enjoy jobs and activities that involve mechanical manipulations or repairs and construction. They are interested in action rather than thought and prefer concrete problems to ambiguous, abstract problems. Sample Realistic occupations include auto mechanic, gardener, plumber, and engineer.
- The *Investigative* Theme or I, refers to a person's preference for activities that entail the systematic or creative investigation of physical, biological, and cultural phenomena. Investigative types enjoy gathering information, uncovering new facts or theories, and analyzing and interpreting data. They prefer to rely on themselves rather than on others in a group project. Sample Investigative occupations include college professor, physician, psychologist, and chemist.
- The *Artistic* Theme or A, refers to a person's preference for activities that are ambiguous, free, non-systematic and that entail the manipulation of materials to create art forms or products. Artistic types have a great need for self-expression. They are also comfortable in academic or intellectual

⁸ The descriptions are paraphrased from Harmon, et al. (1994) and Holland (1997).

environments. Sample Artistic occupations include artist, lawyer, librarian, musician, architect, reporter and English teacher.

- The *Social* Theme or S, refers to a person's preference to lead others or for activities that entail the manipulation of others to inform, train, develop, cure, or enlighten. Social types enjoy working with people, sharing responsibilities, and being the center of attention. They also like to solve problems through discussions of feelings and interactions with others. Sample Social occupations include elementary school teacher, nurse, social worker, and occupational therapist.
- The *Enterprising* Theme or E, refers to a person's preference for activities that entail the manipulation of others to attain organizational goals or economic gain. Enterprising types seek positions of power, leadership, and status. They like to take financial risks and participate in competitive activities. Sample Enterprising occupations include traveling salesperson, buyer, realtor, sales manager, and marketing executive.
- The *Conventional* Theme or C refers to a person's preference for activities that entail the explicit, ordered, systematic manipulation of data. Conventional types often enjoy mathematics and data management activities. These individuals work well in large organizations but do not show a distinct preference for or against leadership positions. Sample Conventional occupations include bookkeeper, accountant, banker, actuary, and proofreader.

These General Occupational Themes are measured using scales derived from responses included in interest inventories such as the Strong Interest Inventory. Measurement of each theme is based on responses to approximately 20 to 25 questions, and raw scores are normalized relative to a reference population assumed to have a mean score of 50 and standard deviation of 10. These scores thus serve to locate an individual's occupational personality within a six-dimensional space. We make use of this measurement of occupational personality to identify differences in preferences and to explore how these preferences influence the choice to enter Information Technology careers.

Holland's RIASEC model of occupational personality parallels, but is distinct from the widely used Five-Factor (or Big Five) model of general personality (see Campbell and Borgen 1999), and is one of the leading frameworks in vocational psychology (Tracey and Rounds 1993; Campbell and Borgen 1999). There is general agreement that vocational interests emerge during childhood in response to the interaction between the individual and his or her environment, and become progressively more stable through adolescence, stabilizing in early adulthood. A recent meta analysis of studies reporting longitudinal data finds that rank order correlations of interests increase from around 0.55 for those first tested between ages 12 and 14 to over 0.8 for those first evaluated in their mid- to late-twenties (Low et al 2005).

III. Data

Our data originate in a study of the reasons for the under representation of women in Information Technology careers. Our methodology followed a quasi-experimental

design intended to isolate the effects of occupational personality differences from other possible reasons for gender-based differences in career choice. Because we wished to control for differences in career motivation, educational attainment, and cognitive ability, our sampling scheme was designed to produce a sample of IT professionals and a control group of non-IT professionals who were working in equally demanding careers that required roughly comparable levels of education and skills.

Between December 2003 and September 2004 we fielded a survey intended to gather information on work and family history, educational background, interests, attitudes and measures of Holland's General Occupational Themes from a sample of professionals in Information Technology and other career fields. We solicited participation in our survey through a variety of channels including several large organizations with offices in the central United States, and lists of business and computer science alumni of a large mid-western university. Potential participants were contacted via e-mail, and directed to a secure web-site where they logged-in using a password provided in the contact e-mail. After completing our survey, participants were passed to a second web-site operated by Consulting Psychologists Press, where they completed the Strong Interest Inventory. To encourage completion of both surveys (which we estimate took approximately 45 minutes) we offered respondents a chance to receive one of several hundred \$50 gift cards from a large electronics chain store.

A total of 567 individuals completed both parts of the survey. We classified each respondent as either an IT or non-IT professional based on their responses to questions asking them to indicate their current career field (one of 13 categories or "Other") and specific job title (open-ended). There were 415 non-IT professionals and 152 IT

professionals in our sample. The IT professionals include application developers, programmers, software engineers, database administrators, systems analysts, web administrators, and web developers. The non-IT professionals include accountants, auditors, CEOs, CFOs, presidents, consultants, engineers, managers, administrators, management analysts, scientists, technicians, nurses, teachers, etc.

Table 1 reports a number of demographic characteristics for the full sample, and for the IT and non-IT samples separately. More than 44 percent of the respondents were female, but the proportion of females in the IT sample, at 31.5 percent, closely approximates the US figure of 27 percent. Women made up about half of the non-IT sample, which is again close to the US figure for Management, Professional and Related occupations (50.3 percent).

In terms of race composition our sample includes relatively few non-whites (just 8.3 percent) and Hispanics (just 2.7 percent). As we might expect given our sampling criteria this is a highly educated sample: 45 percent have completed an advanced degree, another 47 percent have completed a bachelors degree, and close to 80 percent have completed college calculus. The average age for both the IT and non-IT samples is close to 40, and both samples have had considerable work experience. Both the IT and non-IT survey respondents report having worked in their current career fields for more than 10 years, and having been with their current employer for about 7.5 years. Almost all of the respondents in our sample report holding full-time jobs. They report spending an average of 48 weeks per year at their primary occupation (less than 20 percent worked fewer than 46 weeks), and working an average of 43.3 hours per week.

Consistent with the occupational composition of our sample, and the education and experience levels, salaries reported are substantially higher than those typical for all workers in the US. Information about income was collected in terms of relatively broad intervals. Table 2 summarizes the distribution of income. The median income for the group falls in the \$60,000-75,000 range, and the distributions are approximately the same for both the IT and non-IT samples.⁹

Table 3 summarizes scores on the General Occupational Themes for our sample broken down by gender. In addition, the table includes average scores on each Theme from the sample of 9,500 males and 9,500 females used to establish the population norms for each scale. In the general population it is clear that, on average, men score higher than women on the Realistic and Investigative themes, and lower on the Artistic and Social themes. Differences on the Enterprising and Conventional Themes are less pronounced. For the most part the same pattern holds true in our sample, except that women score higher than men on the Enterprising and Conventional themes.

The question, then, is whether these differences in occupational personality can help account for differences in career choice between IT and other non-IT professional careers?

IV. Personality and Career Choice

⁹ For 2004 the Current Population Survey reports median weekly earnings for all workers 16 and over of \$638. Assuming 52 weeks of paid work, this implies median annual income of \$33,176. For computer and mathematical occupations median weekly earnings were about 50 percent higher \$1,144 (equivalent to \$57,928 on an annual basis); for management, professional and related occupations they were \$918 (\$47,736 on an annual basis).

As the summary statistics in Table 1 make clear, women are under represented in Information Technology Careers in our sample. As a first step to evaluating this observation we estimate a simple probit regression in which the dependent variable equals one if the individual is currently working in an IT career and zero otherwise. We begin with no controls other than gender, and then add demographic variables to condition for the effects of race, ethnicity and age. We report these regressions in the first two columns of Table 4. Note that in this table we have expressed all coefficient values as marginal effects. For dummy variables the magnitude of the coefficient shows the effect on the probability of choosing IT when the variable changes from zero to one. For continuous variables the coefficient is the derivative of the probability function evaluated at the means of the independent variables.

Although the demographic controls have some relationship to the choice of IT careers, it is apparent they don't have an appreciable impact on the gender effect, which is strong and statistically significant in both formulations. Based on these regressions it appears that other things equal, women are approximately 14 percent less likely to choose IT careers than are men.

In the third column of the table we add scores on the six General Occupational Themes. It is clear that these occupational personality characteristics are indeed strongly associated with career choice decisions. The model fits the data much more closely, as indicated by the decline in the absolute value of the log likelihood and increase in the pseudo R-squared. Both the Realistic and Enterprising scores are highly statistically and economically significant. A high value on the Realistic GOT is positively related to the choice of IT careers, and the coefficient implies that the difference in the mean values of

the Realistic GOT for men and women can explain 3.5 percent of the difference in career choices (or one quarter of the total 14 percent differential). The difference in mean values of the Enterprising GOT meanwhile can explain another 2 percent of the differential in career choices.

Inclusion of all six GOTs reduces the effect on the female dummy variable from 14 percent to 4.5 percent, which is statistically indistinguishable from zero. Thus, while there may be some residual gender differences in career choices between men and women, it appears that upon controlling for differences in occupational personality the gender differences are substantially reduced.

V. Discussion

One of the persistent facts of gender economics is the high degree of gender segregation in the workforce. Men and women tend to concentrate in very different occupations. There are many potential explanations for this pattern of segregation, including discrimination, differences in ability, and choice. By introducing a direct measure of individual preferences through the use of a widely accepted measure of occupational personality and by controlling for factors like educational attainment and attachment to the workforce, we are able to directly test the effects of preferences on career choices in the specific context of the choice between IT and non-IT professional careers.

We find that within a sample of full-time employed professional workers differences in preferences can explain a large fraction of the apparent underrepresentation of women in Information Technology. In other words, much of the

difference in entry into IT is the result of the fact that, on average, men and women value different aspects of work and therefore make different career choices. Controlling for these differences in preferences substantially reduced the differences between men and women in the choice of IT careers.

Because our research design controls for career motivation, education, and cognitive skills, we cannot rule out the possibility that discrimination or differences in ability also act as filters differentially reducing the entry of women into professional occupations more generally. Further work is needed to assess this issue, but it is worth observing that women make up nearly half of our control group, so differences in ability or discrimination cannot be overwhelming barriers to their entry into professional occupations. Although we cannot rule out a role for discrimination or differences in ability, our results indicate that even if these factors could be eliminated women would still be under represented in Information Technology because of differences in their occupational preferences relative to men.

It is possible, of course, that the differences in occupational personality that we find are a product of reverse causation. Work experience may have altered occupational preferences. Given the evidence cited earlier on the stability of occupational preferences we believe that such effects are likely to be small, but given our evidence we cannot rule out this possibility. Clearly, collecting longitudinal data that would allow for measurement of occupational personality prior to entry into the workforce would be preferable. Budget limitations prevented us from collecting such data but our results suggest that further work along these lines would be highly valuable.

Having identified a potential role for occupational personality in accounting for gender differences in labor market outcomes, further work on the factors influencing the formation of this element of career preferences also appears to be called for.

Occupational personality is not an inherent characteristic, but is a complex product of the interaction between environmental factors and individual characteristics. Thus parental and family influences, as well as educational and social pressures may contribute to the divergence in patterns of occupational personality between men and women.

Understanding, how and when these differences emerge appears to be an important topic for future research, especially for those who may wish to increase women's participation in the nation's technical workforce.

References

- Barrick, Murray R., Michael K. Mount, and Rashmi Gupta (2003). "Meta-analysis of the Relationship Between the Five-Factor Model of Personality and Holland's Occupational Types." *Personnel Psychology* 56, 45-73.
- Bowles, Samuel, Herbert Gintis and Melissa Osborne (2001). "The Determinants of Earnings: A Behavioral Approach." *Journal of Economic Literature* 39, no. 4, 1137-1176.
- Campbell, David P. and Fred H. Borgen (1999). "Holland's Theory and the Development of Interest Inventories." *Journal of Vocational Behavior* 5, 86-101.
- Coleman, Margo and Thomas DeLeire (2003). "An Economic Model of Locus of Control and the Human Capital Investment Decision." *Journal of Human Resources* 38, no. 3, 701-721.
- Donnay, D. A., Morris, M. L., Schaubhut, N. A., & Thompson, R. C. (2005). *Strong Interest Inventory Manual*. Mountain View, CA: Consulting Psychologists Press.
- Fuchs, Victor (1988). *Women's Quest for Economic Equality*. Cambridge, MA and London: Harvard University Press.
- Groves, Melissa Osborne (2005). "How Important is your Personality? Labor Market Returns to Personality for Women in the US and UK." *Journal of Economic Psychology* 26, 827-841.
- Harmon L, et al. (1994). *Strong Interest Inventory Applications and Technical Guide*. Stanford, CA: Stanford University Press.

- Heckman, James J., Jora Stixrud, and Segio Urzua (2006). "The Effects of Cognitive and Noncognitive Abilities on Labor Market Outcomes and Social Behavior." National Bureau of Economic Research Working Paper, no. 12006.
- Holland, John L. (1959). "A Theory of Vocational Choice," *Journal of Counseling Psychology* 6, 35-45.
- Holland, John L. (1985). *Making Vocational Choices*. Englewood Cliffs, NJ: Prentice Hall.
- Holland, John L. (1997). *Making Vocational Choices*, 3rd edition. Lutz, FL: Psychological Assessment Resources.
- Jackson, Michelle (2006). *European Sociological Review* 22, no. 2, 187-199.
- Jacobsen, Joyce P. (Forthcoming). *The Economics of Gender* 3rd ed. Malden, MA: Blackwell.
- Kuhn, Peter and Catherine Weinberger (2005). "Leadership Skills and Wages." *Journal of Labor Economics* 23, no. 3, 395-436
- Long, J. Scott, Ed. (2001). *From Scarcity to Visibility: Gender Differences in the Careers of Doctoral Scientists and Engineers*. National Research Council. Washington, DC: National Academy Press.
- Low, K. S. Douglas, Mijung Yoon, Brent W. Roberts and James Rounds (2005). "The Stability of Vocational Interests from Early Adolescence to Middle Adulthood: A Quantitative Review of Longitudinal Studies," *Psychological Bulletin* 131, no. 5, 713-737.

Polachek, Solomon (1981). "Occupational Self-Selection: A Human Capital Approach to Sex Differences in Occupational Structure." *Review of Economics and Statistics*, 63(1), 60-69.

Xie, Yu and Kimberlee A. Shauman (2003). *Women in Science: Career Processes and Outcomes*. Cambridge, MA and London: Harvard University Press.

Table 1: Demographic Characteristics of the Sample

Variable	Number of Obs.	Mean	Std. Deviation	Min	Max
<i>Full Sample</i>					
Age	566	39.299	9.906	22	70
Non White	567	0.085	0.279	0	1
Hispanic	567	0.026	0.161	0	1
Female	567	0.444	0.497	0	1
Completed BA	567	0.466	0.499	0	1
Completed BA and Higher Degree	567	0.451	0.498	0	1
Completed College Calculus	567	0.781	0.414	0	1
Years in Current Position	566	4.470	4.758	0	35
Years with Current Employer	564	7.456	6.863	0	36
Years in Current Career Field	566	11.926	8.216	0	40
Number of Jobs in Current Career Field	557	3.285	2.242	0	15
Weeks worked in past year	548	48.131	5.514	20	52
Average Hours worked per week	564	43.252	10.133	0	82
<i>Non-IT Professionals</i>					
Age	414	38.935	9.915	22	70
Non White	415	0.089	0.285	0	1
Hispanic	415	0.029	0.168	0	1
Female	415	0.492	0.501	0	1
Completed BA	415	0.410	0.492	0	1
Completed BA and Higher Degree	415	0.533	0.500	0	1
Completed College Calculus	415	0.793	0.406	0	1
Years in Current Position	414	4.423	4.864	0	35
Years with Current Employer	412	7.488	7.061	0	36
Years in Current Career Field	414	11.273	7.982	0	40
Number of Jobs in Current Career Field	407	3.231	2.200	0	12
Weeks worked in past year	399	47.900	5.741	20	52
Average Hours worked per week	413	43.680	10.440	0	82
<i>IT Professionals</i>					
Age	152	40.289	9.845	24	65
Non White	152	0.072	0.260	0	1
Hispanic	152	0.020	0.140	0	1
Female	152	0.316	0.466	0	1
Completed BA	152	0.618	0.487	0	1
Completed BA and Higher Degree	152	0.230	0.422	0	1
Completed College Calculus	152	0.750	0.434	0	1
Years in Current Position	152	4.599	4.471	1	25
Years with Current Employer	152	7.368	6.317	1	26
Years in Current Career Field	152	13.704	8.598	1	38
Number of Jobs in Current Career Field	150	3.433	2.353	1	15
Weeks worked in past year	149	48.752	4.817	20	52
Average Hours worked per week	151	42.079	9.170	0	60

Source: Professional Worker Career Experience and Family Background Survey, University of Kansas.

Table 2: Current Annual Pre-Tax Salary Distribution

Current Salary		Full Sample			Non-IT Professionals			IT Professionals		
More than	Less than	N	Pct	Cum Pct.	N	Pct	Cum Pct.	N	Pct	Cum Pct.
0	\$30,000	43	7.82	7.82	35	8.68	8.68	8	5.44	5.44
\$30,000	\$45,000	98	17.82	25.64	77	19.11	27.79	21	14.29	19.73
\$45,001	\$60,000	112	20.36	46	89	22.08	49.88	23	15.65	35.37
\$60,001	\$75,000	102	18.55	64.55	61	15.14	65.01	41	27.89	63.27
\$75,001	\$90,000	79	14.36	78.91	51	12.66	77.67	28	19.05	82.31
\$90,001	\$105,000	39	7.09	86	31	7.69	85.36	8	5.44	87.76
\$105,001	\$120,000	26	4.73	90.73	17	4.22	89.58	9	6.12	93.88
\$120,001	\$135,000	13	2.36	93.09	9	2.23	91.81	4	2.72	96.6
\$135,001	\$150,000	12	2.18	95.27	9	2.23	94.04	3	2.04	98.64
\$150,001	\$175,000	9	1.64	96.91	8	1.99	96.03	1	0.68	99.32
\$175,001	\$200,000	0	0.00	96.91	0	0.00	96.03	0	0.00	99.32
Greater than	\$200,000	17	3.09	100	16	3.97	100	1	0.68	100

Table 3: Mean Scores on General Occupational Themes, by Gender

General Occupational Theme	Survey		Population Norms	
	Males	Females	Males	Females
Realistic	54.6	47.0	55.0	45.0
Investigative	53.9	51.5	51.4	48.6
Artistic	47.2	50.6	48.7	51.3
Social	44.9	51.6	48.0	51.9
Enterprising	47.9	50.7	49.6	50.4
Conventional	52.4	55.2	49.4	50.6

Table 4: Probit Regressions of the determinants of Choice of IT Career

	I	II	III
Female	-0.1397* -(0.0363)	-0.1418* (0.0365)	-0.0456 (0.0468)
Non-White		0.0185 (0.0815)	-0.0066 (0.0773)
Hispanic		-0.0626 (0.1079)	-0.0696 (0.1050)
Age		0.0135 (0.0148)	0.0044 (0.0145)
Age2		-0.0001 (0.0002)	-0.0001 (0.0002)
Married		-0.0007 (0.0426)	-0.0163 (0.0433)
<i>General Occupational Themes</i>			
Realistic			0.0105* (0.0028)
Investigative			0.0000 (0.0024)
Artistics			0.0029 (0.0025)
Social			-0.0004 (0.0028)
Enterprising			-0.0157* (0.0024)
Conventional			0.0035 (0.0025)
Observed P	0.2686	0.2686	0.2686
Predicted P	0.2632	0.2623	0.2362
N obs	566	566	566
Pseudo R2	0.0216	0.0263	0.123
Log Likelihood	-322.5	-320.66	-288.72

* Statistically significantly different from zero at the one percent level.

Notes: Standard errors are in parentheses. Coefficients are transformed from their original values to reflect the marginal effects of a change in the relevant variable

evaluated at the sample mean values. For zero-one dummies the coefficient shows the effect of changing the independent variable from zero to one.