

# Five Perspectives on Women and Men in the IT Workforce

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## INTRODUCTION

The opportunities in a variety of information technology (IT) occupations, such as software engineer, systems analyst and consultant, combined with increased employer interest (and need) for workers whose essential skill is knowledge and not brawn, intimate that IT is a “level playing field.” That is, simply possessing IT-related skills might mean that a worker’s gender would not be a discriminating characteristic for job-related outcomes in IT work. The perception of high-paying and gender-neutral work should encourage women to enter IT fields. This should be magnified by the increases in resources (public and private) designed to enable women to acquire IT-related skills. For example, early introduction programs, such as the Girl Scout’s STEM program, encourage entry into IT work through newsletters, career information and mentoring opportunities for young girls in the subjects of science, technology, engineering, and mathematics (Girl Scouts of America, 2004).

## BACKGROUND

With STEM and other early intervention educational programs, women should be participating in advanced math and science courses on par with men (Leventman, Campbell, Cullinane, & Perry, 2004). Increased access to educational resources in math-

ematics and science should prepare women to participate in equitable proportions as their male counterparts in IT. Nevertheless, evidence shows that 33%-41% of the entire United States (U.S.) IT workforce are women, and only 25%-30% of the professionally trained IT workforce (Information Technology Association of America 2001)<sup>1</sup>. This suggests that women are underrepresented in IT, regardless of increasing availability of high-paying positions in IT fields and various supportive factors in the social environment. Moreover, given the number of people who enter the IT workforce with post-secondary degrees in English and history, the underrepresentation of women in IT work may not be explained solely by the declining rates of women obtaining bachelor’s degrees in computer science and related programs (National Science Foundation, 1996; Eliassen, 1997).

One conclusion from these observations would be that gender seems to make a difference in employment and job opportunities for the professional IT workforce. We agree, hypothesizing there are interactions among institutional characteristics associated with education, families, industrial markets and workplace organizations, and that these frame patterns of work-related outcomes for the professional IT workforce. The pattern of outcomes, though, tends to be different for women and men. Before elaborating on our model, we first review other theoretical viewpoints, including human capital, essential differences, social construc-

tionist and techno-feminist, which are often referenced when discussing work-related outcomes for workers in general.

### Human Capital Perspective

The human capital perspective is premised on a cost-benefit analysis for investing in skill enhancement (Becker, 1962). For example, if the anticipated returns from higher education or firm-specific training are greater than the costs, a person theoretically would be likely to invest in additional education or training. The benefits from skill enhancement could include higher earnings, promotions, increased job autonomy and higher job satisfaction. The human capital perspective explicitly suggests that work-related outcomes depend largely on IT workers' quantity and quality of human capital investment. Implicitly, the human capital perspective assumes that neither gender nor technology *per se* necessarily influence job selection or work-related outcomes.

### Essentialist Perspective

In the essentialist's view, men and women have innate differences that lead to gendered outcomes. Gendered responses to stress, for example, are believed to reflect those differences between males and females. Males respond to stress through aggressive actions, and this is considered ideal for leadership positions in the workplace. Females, however, tend to befriend and pacify others in times of stress (Barnett & Rivers, 2004). Males are thought to emphasize systemizing, analyzing, exploring and governing, whereas females emphasize empathizing and nurturing others. Thus, occupational selection might find women seeking to work in settings that do not violate their feminine nature, whereas men might find that high-level organizational positions fit with their intellect and logic (Barnett & Rivers, 2004). An essentialist view suggests that a feminine nature would necessarily limit women's employment opportunities in various IT occupational fields, such as network and systems analysis, computer engineering or database administration. As with the human capital perspective, technology *per se* does not influence either job selection or work-related outcomes.

### Social Constructionist Perspective

According to the social constructionist perspective, men and women are socialized by distinct social influences that ultimately lead to more valuable work-related outcomes for men than women. From this perspective, men are taught at a young age to value achievement and competition, whereas women are taught to value affiliation and social relationships (Abu-Saad & Isralowitz, 1997). Through this social process, women learn to value attachment to family, whereas men learn to value attachment to the workplace. Men are socialized to have an instrumental orientation toward work, while women are socialized to have a communal orientation that emphasizes harmony, connectedness and concern for others (Mason, 1994). As a result, women might be less interested than men in the more technical occupations (Barnett & Rivers, 2004). Since professional technical occupations are often associated with greater rewards in terms of pay, prestige and career advancement, men might have considerably more opportunities to secure better work-related outcomes than women in IT-related fields. Social constructionists also view technology as a gender-neutral phenomenon.

### Techno-Feminist Perspective

According to the techno-feminist perspective, technology historically has been created and designed largely by men for specific masculine projects. In this sense, technology is viewed as an integral part of the masculine identity, whereas femininity is at minimum incompatible with most technologies (Wajcman, 1991). This gendering leads to different social relations at work and different work-related outcomes for men and women (Wajcman, 1991, 2004).

For women to successfully engage technology, they must abandon their femininity to some degree to better understand technology's masculine language and implementation. From this perspective, the implementation of technologies originates with powerful men, while technologies also convey power to those who implement them. Without specific knowledge on how to best make use of IT, for example, women cannot potentially possess power in the workplace.

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