

Understanding the “Mommy Tracks”: A Framework for Analyzing Work-Family Balance in the IT Workforce

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ABSTRACT

Despite the recent growth in the number of women in the American labor force, women are still under-represented in the IT workforce. Key among the factors that account for this under-representation is balancing work-family issues. This article presents a framework for analyzing work-family balance from a field study of women employed in the American IT workforce. The findings are examined through the lens of the Individual Differences Theory of Gender and IT to show the range of ways in which work-family considerations influence women's IT career decisions. The framework is used to support the theoretical argument that women exhibit a range of decisions regarding career and parenthood: the non-parent, the working parent, the back-on-track parent, and the off-the-track parent. These findings illustrate an identifiable theme that crosses geographical regions and timeframes; societal messages are complex and difficult to digest and are processed in different ways by different women, yet they contribute to the decisions women make about their professional and personal lives.

Keywords: gender; human resource management; Individual Differences Theory of Gender and IT; IS career path; IT professional; organizational diversity; qualitative research; work-family balance

INTRODUCTION

In the transition to an information-based global economy, the lines between work and home are blurring as technology reshapes the workplace and as the nature of home life evolves. This evolution of domestic life has brought a shift in societal thinking about moth-

ers working outside the home (McRae, 1996; Trauth et al., 2003). The National Council of Women's Organizations (2003) estimates that 63% of women with children under the age of six and 78% of women with children ages six to 17 currently are employed in the labor force. Yet, there is still an under-representation of

women in the IT workforce. A study produced by the Information Technology Association of America (ITAA) Blue Ribbon Diversity Panel (2003) found that representation of American women in high-tech employment fell from 41% to 34.9% between 1996 and 2002. This number is significantly low, considering that during the same period, the percentage of women in all occupations in the U.S. was 46% (Bureau of Labor Statistics, 1996, 2002). Thus, although the number of women in the labor force is increasing, the number of women in the IT workforce is noticeably lower.

Key among the factors that account for the under-representation of women in the IT workforce is balancing work and family. Some researchers have speculated that IT work is not an ideal fit for working mothers because of long work hours, increased conflicts with family responsibilities, and the difficulty of returning after maternity leave to an industry with ever evolving technologies (Kuosa, 2000; Webster, 1996). Thus, the question remains: Does the nature of IT work with regard to work-family balance negatively influence female participation in technical careers? Hence, the purpose of this article is to empirically explore the influence of work-family balance on American women's participation in the IT workforce.

The reasons for doing so are twofold. First, although both women and men report issues with work-family balance (Greenhaus & Parasuraman, 1999; Milkie & Peltola, 1999), the literature shows that women as a group tend to contribute more time to domestic duties and are more likely to make career sacrifices than men as a group (Hochschild, 1997; Hochschild & Machung, 1989; Perlow, 1998). The National Council of Women's Organizations (2003) found that, on average, women contribute 35.1 hours a week to domestic duties, while, on average, men contribute 17.4 hours a week. Furthermore, women average 11.5 years out of the paid labor force for care-giving responsibilities, whereas men average only 1.3 years. Thus, while men and women both report issues with work-family balance, they exhibit different response behaviors (Mennino & Brayfield, 2002). Second,

the literature suggests that women in the IT workforce report higher levels of stress from work-life imbalance than their male counterparts (Duxbury et al., 1992; Gallivan, 2003; Igarria et al., 1997). Therefore, while men and women both report stress related to IT work, they exhibit different behaviors in response to that conflict. Consequently, it is important to investigate more deeply the work-family balance issues facing women in the IT workforce and their variety of responses¹.

In this article, we investigate the particular ways that women in the American IT workforce experience and respond to issues of work-family balance by using the Individual Differences Theory of Gender and IT. We expand a work-family balance framework initially presented in Quesenberry et al. (2004) to articulate the ways in which individual and environmental factors influence female responses to issues of work-family balance. Finally, we develop a set of proactive responses in order for public policy and employers to address the challenges of balancing work and family.

LITERATURE REVIEW

A dichotomized view of women's motherhood choices permeates the working mother literature and tends to present two stereotypical women: the devoted mother and the cold careerist. Mason (1988) discusses two types of women: those who work to live and those who live to work. The former place an importance on children at the expense of a career and do not compete for high status or male-dominated positions. Rather, they gravitate toward female-dominated fields. Women who live to work are motivated by career status and feel that equality means competing with men for their jobs. Nevertheless, these women encounter difficulty, because the rules have not changed to include them. De Marneffe (2004) explains that dramatic shifts in women's lives have created the potential for motherhood to be a chosen activity, something that was not always possible for women. Yet, at the same time, the increase in motherhood choices can create challenges for women. De Marneffe adds that deci-

sions about motherhood can create tension around a woman's point of identity and its relationship to other aspects of herself, such as her need for other aspirations, her need to work, and her need for solitude.

In response, a number of researchers have studied the relationship between work and family that moves away from a dichotomized motherhood view and presents a more diverse view of women. Peters (1997) argues that stay-at-home mothers and working mothers are not mutually exclusive roles. In this sense, Boyd (2002) argues that stay-at-home mothers also work, whether it is paid work (such as part-time work) or unpaid work (such as work in the home or community). Working mothers are also active inside the home, despite their career responsibilities. Engberg (1999) argues that maintaining work-family equilibrium presents such a challenge for women that the problem is perhaps not so much the glass ceiling as it is the sticky floor. In summary, while a superficial examination of the literature on female work-family balance might lead to a dichotomized view of a choice between career and family, a deeper investigation demonstrates a more diverse perspective on women with regard to their choices about work-family balance.

Work-Family Issues in the IT Workforce

Studies of the IT workforce are mixed on the question of whether the IT workplace is a conducive or unfriendly environment for working mothers. One stream of research points to the IT industry as having a pragmatic approach to working practices that can have a positive impact on working mothers. These practices include innovations in teleworking, job sharing, and technical advances in office communications that allow caregivers to spend more time in the home (Lynch, 2000). Furthermore, studies have found that working mothers in IT leverage technology such as mobile phones, conference call devices, and e-mail in order to balance the demands of the job with the needs of their children (Quesenberry & Trauth, 2005; Zimmerman, 2003).

An alternative stream of research highlights several difficulties associated with work-family balance in the IT workforce. Trauth's (1995, 2000) study of women in Ireland's emerging IT sector found positive views of women working in IT, because the industry had not had time to develop traditional gendered patterns. Yet, despite these more accepting societal views, many working mothers in her study found it difficult to manage work-family conflicts (Trauth, 1995, 2000). Similar findings resulted from Trauth's (2002) and Trauth et al.'s (2003) study of women in the Australian IT workforce; despite shifts in societal views about working mothers, balancing work and family was still found to be difficult for women in IT. Participants in this study found it challenging to manage domestic responsibilities while trying to keep pace with a rapidly changing field (Trauth, 2002; Trauth et al., 2003). Webster (2002) also argues that family structures and female roles may vary across countries, but overall, women continue to be the primary provider for domestic and childcare responsibilities. Webster (2002) adds that this is "particularly hard to reconcile with the working rhythms of IT work" (p. 6) and may not be conducive for many women.

Researchers also highlight several female consequences associated with work-family balance in the IT workforce. Mennino and Brayfield (2002) found that female employees in male-dominated occupations make more family trade-offs and fewer employment trade-offs than employees in other occupations. In addition, work-family conflicts appear to have the most negative effect on women's performances in computer-related fields during the early career choice and advancement to management stages (Ahuja, 2002). Coincidentally, Igbaria and Chidambaram (1997) found that women in IT tend to be younger, have shorter job tenure, have fewer years in the industry, and hold lower positions than men. Ahuja (2002) reports that women may have to neglect certain family obligations to be eligible for promotional opportunities similar to those of men. Baroudi and Igbaria (1994) point to family-related con-

Table 1. Constructs of the individual differences theory (Trauth et al., 2004)

High-Level Construct	Subcategory Construct
Personal Data	Demographics (e.g., Age, Race, and Ethnicity) Lifestyle (e.g., Socioeconomic Class, Parental Background) Workplace (e.g., Job Title, Technical Level)
Shaping and Influencing Factors	Personal Characteristics (e.g., Educational Background, Personality Traits and Abilities) Personal Influences (e.g., Mentors, Role Models, Experiences with Computing)
Environmental Context	Cultural Attitudes and Values (e.g., Attitudes about IT and/or Women) Geographic Data (e.g., Location of Work) Economic and Policy Data (e.g., about the Region of Work)

straints as a partial explanation for the underrepresentation of women in managerial positions. Likewise, Sumner and Werner (2001) found the burden on family-career balance from overtime and administrative tasks to be a barrier to women in management.

This review of the literature reveals two themes that warrant further investigation. First, today's working mothers in IT are not necessarily at the extremes of devoted mother or cold careerist. Rather, they represent a range of women along the career-family spectrum with a variety of perspectives and experiences. Hence, further study is needed to understand this diverse range of perspectives and experiences. Second, there is little consensus in the IT literature as to whether or not the industry is compatible with work-family balance. Thus, additional investigation would contribute to a deeper understanding of the work-family factors influencing women in the IT workforce.

THEORETICAL FOUNDATION

The guiding theory for this research is the Individual Differences Theory of Gender and IT proposed by Trauth (2002) and Trauth et al. (2004; 2005; 2006) that focuses on differences among women in the ways they experience and respond to characteristics of IT work, the IT workplace, and societal messages about women and IT. This theory focuses on women as individuals having distinct personalities, experiencing a range of sociocultural influences, and, therefore, exhibiting a range of responses to the social construction of IT. Thus, the theory elucidates the differences *within* rather

than *between* the sexes and examines issues at an individual rather than a group level of analysis. The Individual Differences Theory of Gender and IT explores three key constructs: personal data, shaping and influencing factors, and environmental context (Trauth et al., 2004) (see Table 1).

The goal of the overall research program, of which this particular study is a part, is to engage in field-based theory testing by examining the particular ways that female IT professionals are influenced by and react to the social shaping of both gender identity and IT. Thus, the objective of this article is to contribute to a deeper understanding of specific individual and environmental factors that influence American women in their professional development and current working lives as IT professionals by examining one particular factor: work-family balance. Hence, the following research questions are explored: (1) What are the work-family balance issues facing women in the IT workforce? and (2) How do women respond to these issues when making decisions about their personal and professional development?

METHODOLOGY

Trauth (2001) explains that epistemology and methodology delineate a way of seeing and researching the world and, consequently, are fundamental considerations in research design. As a result, researchers must choose an epistemological approach that best reflects the research question(s) and the nature of the phenomenon of interest (Klein & Myers, 1999; Orlikowski & Baroudi, 1991). An interpretive

epistemology and qualitative methodology are employed in this study, because the intent is to discover the deeper structure around work-family balance by investigating the perspectives of women in IT work. Thus, the intent of the study is to qualitatively test a proposed theory about gender and IT by exploring interview data as they relate to the research questions.

This article reports on one aspect of a multi-year, multi-site field study of women working in IT, whose goal is to investigate the female under representation in IT through the lens of the Individual Differences Theory of Gender and IT². The research design is based on Trauth's (1995, 2002) previous interpretive field studies of women in technical careers in Australia, New Zealand, and Ireland. Open-ended, in-depth interviews, lasting approximately 90 minutes are conducted with female practitioners and academics in the IT workforce. The interviews are tape recorded for subsequent transcription and data analysis. The coding scheme was developed using open coding techniques based on the interview guide and is oriented toward analyzing interview data for further refinement of the Individual Differences Theory of Gender and IT. The constructs emerging from the coding fall into the constructs of objective data (e.g., demographics), shaping and influencing factors, and emergent themes. Additional details about the coding scheme can be found in Trauth et al. (2004).

The data in this article represent interviews with 57 female practitioners in the IT workforce that were conducted between October 2002 and August 2004. The participants represent a range of geographical locations, ages, demographic backgrounds, educational backgrounds, levels of management and job classifications, relationship statuses, and family compositions³. The women work and live in three different geographical regions of the U.S.: the Northeast (Boston, Massachusetts), the Southeast (Research Triangle/Charlotte, North Carolina), and the Mid-Atlantic (central Pennsylvania). Eighteen of these interviews were conducted in Massachusetts, 25 in North Carolina, and 14 in Pennsylvania. The women ranged in

age from 21 to 58 with the average age of 40.6 years. The racial/ethnic identity of the participants included European Americans, African Americans, Asian Americans, Hispanics/Latinas and Middle Eastern women. The degree concentrations ranged from traditional MIS, CS, and engineering programs to psychology, nursing, communications, and liberal arts. In addition, job titles included CIO and vice president of IT, program/project manager, systems integrator, software architect/engineer, quality assurance engineer, IT administrator, Web developer and consultant, and small business owner. Furthermore, 35 of the women were married, two were in a committed relationship, 14 were single, and six were divorced/not remarried. Thirty-two of the women had one or more children, and 26 of the women did not have children.

ANALYSIS OF WORK-FAMILY BALANCE IN THE IT WORKFORCE

What emerged from the analysis of life histories of women in IT is a framework of decisions about work-family balance. The inspiration for the work-family balance framework came from an interview with a 47-year-old Web site manager and mother of two who argued for variation in the way we view women in IT.

Maybe we need to have a whole new model of how to run a corporation with people who want to go home at night and have dinner with their family. How are you going to do that? I came [to this interview] because I have strong views and I hope they're not the usual things you've gotten. ... Most of my college girlfriends went to the top and then had kids. I had the kids kind of early and now I'm soaring and I don't want to be held back. ... I just want people to see that there are other avenues. [emphasis added] [Elsie]

The work-family balance framework is comprised of four categories of women in the IT workforce: the non-parent, the working parent, the back-on-track parent, and the off-the-

Table 2. Work-family balance framework distribution

Work-Family Balance Framework	# of Participants	% of Participants
Non-Parent	26	45.5
Single	13	50
Married/Partnered	11	42
Divorced/Not Remarried	2	8
Working Parent	26	45.5
Single	1	4
Married/Partnered	23	88
Divorced/Not Remarried	2	8
Back-on-Track Parent	5	9
Single	0	0
Married/Partnered	3	60
Divorced/Not Remarried	2	40
Off-the-Track Parent	0	0
TOTAL	57	100

track parent. It is important to note that the categories in this framework are by no means static or limiting. These categories are dynamic in nature and are used only to analyze data to support the Individual Differences Theory of Gender and IT.

The Non-Parent: Balancing Work-Family Issues without Children

The non-parent category is comprised of women employed in the IT workforce who do not have children. The non-parent represents 26 women, or 45.5% of the women interviewed for this article (see Table 2). These women are single, married, partnered, and divorced, and range in age from 21 to 53, with an average age of 37.8 years. The non-parents consist of two groups of women: women who have not yet had children and women who are not having children. This is important to note this distinction, because not all non-parents are young, single women who have not yet reached a point to have children. Rather, many non-parents are women who have made conscious decisions not to have children. For instance, Claire, a 41-year-old senior quality assurance engineer, explained, "I have chosen not to have kids because I am not maternal." Likewise, Emily, a 53-year-old Web consultant, and her husband made a calculated decision not to have children because of a chronic problem with his ongoing medical surgeries.

Despite this range of explanations regarding motherhood, one common theme arose regarding work-family balance: the non-parents acknowledged their ability to balance more easily the work-family issues in the IT workforce than their coworkers with children. The non-parents felt that they were more able to adjust to the temporal aspects of IT work, including longer work days and late hours. Francie, a 26-year-old software engineer, explained that the ability to work late and long hours is particularly essential during project deadlines and software builds, because her managers are able to count on her being in the office. She also felt that it is very difficult for woman in IT to have a child and a career. In addition, many non-parents felt more able to participate in after-hour networking events than coworkers with children. Julie, a 38-year-old network specialist, explained that she felt like an outsider when she first moved to central Pennsylvania. Yet, she was able to adjust her schedule more easily to spend time networking with coworkers, which eventually led to a heightened sense of community. In addition, several participants also commented on the freedom they enjoyed by not having to make work-child trade-offs. Linda, a 51-year-old systems developer, said that she was glad to not "have any of those really awful life trade-offs" to make.

Although non-parents have chosen to not have children and tend to acknowledge the

increased ability to balance work and life, it does not mean that they are all workaholics who are focused exclusively on themselves or their careers. Many of the non-parents talked about their values regarding personal life and time spent away from the office. They spoke of elder care, responsibility for nieces and nephews, other family commitments, and pets. For instance, Claire uses her technical skills to mentor young girls in various youth societies in order to get them interested in IT. These themes demonstrate that being a non-parent does not preclude having a personal life.

Another theme raised by the non-parents is the societal message about motherhood. This was explored through discussion of national, state/regional, and organizational cultural attitudes toward women and women working. Many non-parents spoke about a cultural message that female family obligations should take precedence over professional obligations. Thus, they should assume domestic childcare roles, and men should assume professional income-earning roles. Betty Jean, a 37-year-old systems integrator, explained that her perception of stereotypical gender roles in North Carolina suggested that women should “date, get married, and have kids.” The only acceptable jobs are domestic or traditional female occupations. Francie summarized this message by explaining:

Typically, the family obligations take precedence over the professional obligation. ... I think typically [the societal view] is, that, when the woman has a child that she should stay home and take care of them. The male would be the financial supporter. [Francie]

From a personal development perspective, the non-parents spoke about the difficulties reconciling their own identities with what they perceive to be a societal stereotype of women. For instance, Nancy, a 48-year-old Web consultant, spoke about the pressures she feels to have children, despite the fact that it conflicts with her own personal desires.

[Speaking about a traditional view of society] a woman's place is to make the home and raise the kids and cook the meals and clean, and all that kind of thing. It really was very clearly what I saw happening in our house [growing up], and what I saw happening on TV. ... There was always this kind of disconnect, it was like I could not imagine not having kids, and yet it was not like I really wanted to, it was just, that's what you did. [Nancy]

The women also spoke about the difficulties reconciling their professional development within views of women working. Many non-parents explained that they had strong professional aspirations and felt that a societal view of women working did not fit with their goals. For example, Julia, a 43-year-old consultant, explained that she chose not to have children, because she did not want to forgo her career ambitions.

I knew very early on that I didn't want children, because I saw from my mother's own example how much of her aspirations that she put aside. ... I saw how much effort went into raising me and my three brothers. And I knew that there were things that I wanted to do [and I could not do it and raise children]. I was not willing to give up my hope that one day I would [be extremely successful in my career]. [Julia]

The non-parents also spoke of the difficulties reconciling their professional development, particularly in job attainment, with that of a socially constructed view of women as primarily mothers. Many non-parents discussed the difficulty they faced in obtaining IT jobs because of attitudes toward women working in IT. For instance, Janet, a 50-year-old IT manager, spoke about a female coworker of childbearing age who was held back by gender stereotypes. During an interview she was told “well you are young, you are going to get married and have children anyway, so there is really no point” in hiring you. When Janet was asked if gender stereotypes in society influenced women's career attainment in the IT industry, she responded:

I think a woman interviewing a woman would not be worried about her having a baby and leaving, but maybe it is more prevalent to me as coming from a man. ... I think because women are a little bit more understanding of, maybe the biological clock, or the need to have children, or the desire to have children. ... I do not think men see that as easily. [Janet]

The Working Parent: Balancing Work-Family Issues Concurrently

The working parent category is comprised of women who have children and a career in IT. The working parent represents 26 women or 45.5% of those interviewed for this article (see Table 2). Working parents are women who do not fit the working parent dichotomy found in the literature, because they place a value on both family and career. Working parents represent a range of ages and relationship statuses including single, partnered, married, and divorced. Furthermore, the working parents represent a range of motherhood scenarios including raising one or more children (biological, adopted, and foster) and vary in age from 27 to 57 years old.

The working parents typically are motivated by both financial and personal desires to simultaneously work and raise their children. Although these women acknowledge the financial benefit of working in IT, an overwhelming sentiment is that they seek employment because of the personal value they place on being active and continuing to grow as a professional. For instance, Irene, a 57-year-old IT strategic planner, explained, "I get a sense of accomplishment and a personal sense of satisfaction from working." In addition, Donna, a 39-year-old quality assurance analyst, was asked how important work was in her life.

I think [having a career] is very important for me. ... It's important to keep my mind active to keep challenged and to like what I do. When I stop having fun at this job, that's probably when I'll decide it's time to move on. I think it's very important to stay active. [Donna]

Although many working parents value a professional career, they also acknowledged the difficulties associated with doing so. The women frequently spoke about the work-family balance issues that arise, particularly with regard to the temporal arrangements of IT work, such as a 24/7 workday where employees are always accessible. For instance, Irene explained that she did not take maternity leave when her son was born because of the high value she placed on her professional life.

I didn't take a maternity leave [when my son was born], which was a big thing in 1971. ... I realized that I did not want to be a stay-at-home mom and I wanted to go back to work. ... As it invariably happens, I was on an application where I was on call. It was difficult. I think having a family or any responsibility, it could be an elderly parent or it could be anybody, but certainly a child [is difficult]. [Irene]

Candace, a 41-year-old systems developer, felt that there was a growing tendency in the last few years for employees to work extra hours and to be "constantly available by computer or phone." She feels this paradigm is not compatible with home life but is due mainly "to advances in technology making it possible for people to be continuously on call."

A common and recurring theme raised by the working parents related to the importance of work flexibility. The women spoke about the benefits of work programs such as job sharing, part-time work, and manageable commutes. For instance, Kimberly, a 38-year-old project manager working with enterprise resource planning packages who had the ability to telecommute, was one of the first women at her IT consulting firm to be promoted to manager while on maternity leave. She valued the four-day work week that gave more time at home. Rose, a 47-year-old director of IT, feels that telecommuting is key, because it gives her more control and allows her to "bring in some income but at a schedule that was much more convenient" to her. Helen, a 44-year-old systems designer, stressed

the importance of working part-time while her children were still in grade school. Ivanna, a 40-year-old user administrator, explained that she left a job and moved to another state in order to have a more flexible commute.

Another prevalent theme expressed by working parents is the importance of supportive partners and spouses, a factor that supports the constructs of personal influences of significant people in the Individual Difference Theory of Gender and IT. Many working parents spoke about how their partners and spouses share an active role in child rearing, domestic responsibilities, and community volunteer activities. For instance, Allison, a 46-year project manager, spoke about spouse support as she worked full-time and attended night school in a technology program while pregnant with their second child. Rose discussed the importance of her husband's support and the domestic shift that has occurred in their household since the birth of their daughter:

My husband, I don't think, would have married anybody who wanted first and foremost to be an at-home mom. And he has been very supportive ... and he's probably been my biggest advocate. ... I've even seen a real change in him. This was a guy that was very devoted to work, that would spend many hours at work, had no outside interests other than work. ... [Now] he is spending a lot more time at home. He is taking a lot more responsibility for our daughter. ... That to me is evidence that his view of the world has changed. I know that he and I are in constant communication when he was working over who is going to be home at what time to make sure [our daughter] was being cared for. Who is going to be home when she is ill? How do you take care of those dynamics? Well, you know, we would really share and figure out how you really deal with this. [Rose]

Many working parents spoke about the societal pressures and mixed messages they receive about raising children and working outside of the home. The participants highlighted

the societal messages that women should be stay-at-home mothers and not work outside of the home. Rose, who is Japanese American, explained that her culture puts "a lot of emphasis on the Japanese woman staying home and taking care of the children" and taking on duties like finances and keeping certain traditions alive. Sandra, a 49-year-old IT manager, had a supervisor who told her, "you should be home making your children better people" rather than working outside of the home. Also, Pamela, a 27-year-old systems administrator in central Pennsylvania explained:

I do not encounter a whole lot of people thinking that I am dumb because I am a woman, because I have kind of proven myself. What I encounter is bias against the fact that I work and I am a mom. I have had engineers tell me to "go home and be with my kid." ... [A coworker once approached] me when I was pregnant, like eight months pregnant, he comes up into my office and goes, "so, after you have your baby, are you staying home with him?" ... And I said, "No, I am planning on coming back to work." And he is like, "That is the problem with people's kids today." He says, "Mothers don't want to take care of their children," and he walks out. [Pamela]

Other environmental influences on personal and career development of working parents came from their parents. Pamela's father, for example, had a significant effect on her development as an IT professional.

My dad and I were constantly battling. He did not want me to go to college. He wanted me to stay working at the grocery store that I worked at until I got married and had kids and then quit and stayed home with the babies. And that was not my idea of what I wanted to do. So we always argued when I was in high school. ... And then right before I left for college, he was like, "You realize I cannot help you pay for college, because I have got to help pay for your brother's college. He's going to be a breadwinner someday." ... [With regard to

future plans] mainly, I saw myself as doing, I guess doing very well in my field. I always wanted to be a professional. I guess I always, I kind of wanted to get married and have kids someday. But that seemed like distant, distant future. ... I never wanted to be, and I still never want to be in the position where I depend on somebody else. [Pamela]

The working parents spoke of the difficulties of reconciling their professional development, particularly in job attainment with societal images of women working in IT. They noted the negative stereotypes associated with being a working parent and the influence it had on their careers. Sandra discussed a negative stereotype of working parents that she encountered in a job interview and the impact it had on her career:

[The interviewer] said, "Well you are going to quit anyway." He said, "You are going to get pregnant and quit. Then we will have to hire somebody else, or train somebody else to fill in while you are on maternity leave." I said, "I already have two children and I am not [currently] married and I am not planning on having anymore children." And he said, "You will. You will get married and you will get pregnant and then we will be stuck here." I was not hired for that position. [Sandra]

To overcome these societal views of women, the working parents shared accounts of having to work harder and longer hours than coworkers in order to dispel the negative stereotypes of working mothers. For instance, Joanne and her husband juggle childcare responsibilities; it does not fall only on her shoulders. The idea that it does is "just more of a perception than a reality." Carol, a 41-year-old IT course developer, adds that there is a misconception that female workers will leave a company to take care of their children or that their minds will be on their children during the day. Ivanna uses her own situation as evidence that working mother stereotypes are misconceptions. She has three children and an adopted

niece and nephew yet does not miss or leave work more than her male counterparts.

The "Back-on-Track" Parent: Balancing Work-Family Issues Sequentially

The back-on-track parent is comprised of employees who, for a variety of reasons, took time away from work to raise children and then later returned to the IT workforce. The back-on-track parents represent 9% or five women interviewed for this article (see Table 2). The back-on-track parents are older in age, ranging from 44 to 58, with an average age of 50.2 years. All of these back-on-track parents were in committed relationships during their employment break so that the main source of income came from their partner or spouse.

A common theme arising from the back-on-track parent interviews was the idea that women should take time away from work to stay home, because it was the right thing to do. This idea seems to stem from societal messages that the women received during their childhood and adult lives. Initial analysis demonstrates that these messages vary by geographical regions included in the study and by the associated cultural backgrounds. For example, Jill, a 44-year-old IT instructor, expressed the societal pressures in central Pennsylvania that she receives about motherhood and working. She feels that women are run ragged, because they are expected to be responsible for household work, family budgets, and childcare responsibilities. Although Sue, a 53-year-old IT coordinator from central Pennsylvania, eventually returned to work, she felt that she was supposed to follow the path in life of going to school, getting married, and then staying home with kids.

I wound up going to a two-year college, because I really didn't think that getting into sports was something I was supposed to do. I felt more pressure to go into business and get married and become a secretary or something like that. ... So I went to a two-year associate Catholic college and took business, so I got

an associate degree in business and then got married, had kids, the whole [thing]. [Sue]

Although societal pressures about motherhood and careers affect women in non-technical and technical careers alike, there is a common shared experience of the back-on-track parents that relates specifically to the IT workforce. This theme relates to the amount of skill preparation required for re-entry into the IT workforce. Sue explained that after returning to the IT workforce, she felt like she was in catch-up mode and that she had to be able to absorb and understand new technology quickly. This difficulty of returning to IT work has caused the back-on-track parents to develop plans of action to ease the transition. Hence, the back-on-track parents reflect the influence of personal characteristics that translates into personal success strategies. For instance, Elsie spoke specifically about the amount of intense work that was required to re-enter the IT workforce. Consequently, she developed a success strategy that involved diligently working to prove herself as a viable employee despite the fact that she is 10 years older than her cohorts; that is, Elsie left the labor force for 10 years, and her coworkers at the equivalent stage in their careers are 10 years younger than she. In doing so, Elsie puts in extra hours on the job and seeks out additional on-the-job training in order to get her technical skills up to speed. Yet, she also feels pressured constantly to demonstrate that her prime working years are her 40s and 50s rather than the typical 30s and 40s.

I feel like [fellow coworkers] are all going to retire when [they are] 55 because [they have] worked since [they] were 22. I started at 38. I want to go all the way; I don't want there to be any limits to what I contribute. I have got to work until [I am] 65 because I did not start [my career at a young age, so], I have got to make up [time]. So, I am going to be at this company a long time, but I do not want them to know my age, because they will think [I am too old]. [Elsie]

The stories of back-on-track parents demonstrate that balancing work-family issues in IT work is a constant responsibility that pulls women in several directions at once. Environmental context complicates the pressures women feel in decisions about their professional and personal lives. Likewise, long, irregular work hours associated with IT careers make it difficult to balance work-family issues. Thus, taking time away from the IT workforce is a temporal solution to these conflicts. Leaving the workforce for an extended period of time allows women to balance family responsibilities during the early years of their children's lives and to return to their careers at a point in time when their children are more self-sufficient.

The "Off-the-Track" Parent: Balancing Work-Family Issues by Egression

The fourth type of parent is the off-the-track parent, comprised of employees who permanently leave the IT workforce upon having children. We have not captured data regarding the off-the-track parent, because our participants are drawn from women currently employed in the IT workforce. However, for purposes of conceptual completeness, we include this category in our framework and intend to capture data about this category at a future point in time.

DISCUSSION

The term *mommy track* typically is used to refer to a variety of organizational arrangements that allow women the opportunity to balance more easily the conflicts between work and home (Schwartz, 1989). Yet, much debate centers around the wisdom of having such a track. Proponents argue that corporations should become more flexible and develop arrangements that allow employees, both male and female, to focus their efforts on career as well as family. Opponents argue that the mommy track can be a negative for women in management in that those who choose such a track will be penalized later (Konrad & Cannings, 1994).

Findings presented in this article support the existence of many different roads to female career fulfillment. Thus, the work-family balance framework is a mechanism for articulating the complexities facing women and their decisions about motherhood and careers in IT. In this way, the research presented here provides a mechanism for developing more sophisticated insights into the under-representation of women in the IT workforce.

Contribution to Theory

Our research shows that work-family tradeoff considerations are much more nuanced than what is commonly depicted in the literature. Rather, women represent a range of work-family situations that contain varying issues and concerns. Specifically, this research is an example of the application of the Individual Differences Theory of Gender and IT in order to go beyond the identification of societal messages that operate at the group level and also to understand the response variations among women when examining the topic of work-family balance (see Table 3 for a detailed analysis of the data-theory connection).

Contribution to Literature

This article is consistent with other results from research on gender and IT and the role of family. Over a decade ago, Trauth (1995) investigated the role of work-life balance in the under-representation of women in the Irish IT workforce, and the themes from the Irish women are echoed in the female voices in this article about the American IT workforce today. In both studies, the participants spoke in great length about the challenges of balancing the demands of work and home in the IT industry. The women also dealt with this challenge in a number of ways. Some women elected not to have children at all, some women opted to balance a career and family, and other women chose to sacrifice their careers. These themes are found elsewhere in the literature (Ahuja, 2002; Baroudi & Igbaria, 1994; Igbaria & Chidambaram, 1997; Mitroff et al., 1977; Sumner & Werner, 2001; Trauth 2001, 2002; Trauth et al., 2003; Webster,

2002) that the work-family balance in a technical industry is challenging yet rewarding.

This article also supports the findings that women in the IT workforce receive mixed societal messages about a woman's role with respect to career and family. Trauth's (1995) Irish study found evidence that women receive a variety of societal messages about motherhood decisions in Ireland. One Irish woman explained that it is "still frowned upon for a woman to work" (Trauth, 1995, p. 136). Trauth (2002) also found evidence of a variety of societal messages to which women in the IT workforce are exposed about motherhood decisions in Australia and New Zealand. A woman in New Zealand described societal messages she received about women working in the IT workforce, in which coworkers told her, "I don't think women should be working" (Trauth, 2002, p. 105). These remarks are only a small representation of the range, depth, and variety of overt and subtle societal messages that women receive about career and family. Yet, the remarks illustrate an identifiable theme that crosses geographical regions and timeframes — that societal messages are complex and difficult to digest and are processed in different ways by different women, yet they contribute to the decisions women make about their professional and personal lives.

Contribution to Practice

Before [having a baby], I used to think if you want to work, work, and if you want to have kids, have kids; if you want to do both, fine and quit complaining about it. If you've run into problems, then that's your problem. It wasn't until I had a baby that I realized, you know what, these issues are a little bit bigger than that. There are real issues here, and I just remember because my husband just went back to work. His life was like on pause for five days, and then he resumed, and my life was like on pause, and then forever changed. And that's when I realized, I don't know, I just had a big transition at that time. [Sharon]

Table 3. Work-family balance framework factors

High-Level Construct	Subcategory Construct
Non-Parent	
Personal Data	Range of Ages from 21 to 53 (Demographic) Range of Racial/Ethnic Identities – Primarily Caucasian and African-American (Demographic) Range of Relationship Statuses (Lifestyle) No Children (Lifestyle) Range of IT Job Titles (Work)
Shaping and Influencing Factors	Importance of Personal Time (Personal Characteristics) Easier to Balance Temporal Nature of IT Work (Personal Influences) Easier to Devote Time to Social Networking (Personal Influences)
Environmental Context	Range of Environmental Contexts (Geographic Data) Rejected Messages to Assume Domestic Childcare Roles (Cultural Attitudes and Values and Geographic Data) Personal Development Conflict (Cultural Attitudes and Values) Professional Attainment Conflict (Cultural Attitudes and Values)
Working-Parent	
Personal Data	Range of Ages from 27 to 57 (Demographic) Range of Racial/Ethnic Identities (Demographic) Range of Relationship Statuses (Lifestyle) One or More Children (Lifestyle) Range of IT Job Titles (Work)
Shaping and Influencing Factors	Financial and Personal Motivation to Work (Personal Characteristics) Value Flexible Work Arrangements (Personal Characteristics) Difficult to Balance Temporal Nature of IT Work (Personal Influences) Value Support Networks (Personal Influence – Significant People)
Environmental Context	Range of Environmental Contexts (Geographic Data) Conflict from Messages to Assume Domestic Childcare Roles (Cultural Attitudes and Values and Geographic Data) Personal Development Conflict (Cultural Attitudes and Values) Professional Attainment Conflict (Cultural Attitudes and Values) Perceived Pressure to Work Harder (Cultural Attitudes and Values)
Back-On-Track Parent	
Personal Data	Older in Age from 44 to 58 (Demographic) Primarily Caucasian Racial/Ethnic Identities (Demographic) Committed Relationship Statuses as Married or Partnered (Lifestyle) Range of IT Job Titles (Work)
Shaping and Influencing Factors	Motivated to Building Technical Skills (Personal Characteristic – Success Factors)
Environmental Context	Range of Environmental Contexts (Geographic Data) Accepted Messages to Assume Domestic Childcare Roles (Cultural Attitudes and Values and Geographic Data)

Warren and Tyagi (2003) report that if a woman has a child, it is the single best predictor that she will end up in financial collapse. Likewise, the average middle-class family no longer can afford a home unless both parents work. Clearly, issues of work-family balance should be considered as initiatives are taken to improve female participation in the IT workforce. As this research has demonstrated, the Indi-

vidual Differences Theory of Gender and IT provides a conceptual mechanism to enable a deeper understanding of diverse employee needs. Of utmost importance to practice is the realization that not all women, indeed not all employees, have the same work-family balance issues and, therefore, do not have the same needs or concerns with regard to their careers. Likewise, we do not advocate special consider-

ations given to any group of individuals, as it is highly likely that such a plan of action would weaken these groups in the labor force. Rather, our findings suggest that a more robust and flexible conceptualization of career tracks with multiple avenues will benefit a wider range of IT workers, both men and women, as the traditional view of a career is one that no longer reflects the needs and concerns of workers.

Expansively adapting possible career tracks in the IT workforce also would benefit employers. Bailyn et al. (1997) explain that making an explicit link between people's personal needs and business goals can be a catalyst for changing work practice that will benefit both the company and the employee. A crucial step in this process is to think expansively about how changing particular work practices would help business and help employees. The research lens of the Individual Differences Theory of Gender and IT demonstrates that programs such as flex-time, compressed work weeks, teleworking, job sharing, and referral services for child and elder care would create additional options for employees balancing work and life demands.

CONCLUSION

In this article, we show how the Individual Differences Theory of Gender and IT is used to help us to understand the range of factors influencing decisions about a career in the IT workforce. In order to assist in this analysis, we present a work-family balance framework of IT career decisions that reflect the current literature about work-family decisions as well as empirical data on this topic. Specifically, our analysis demonstrates that there are several explanations for the gender gap in IT and illustrates the ways in which factors related to family responsibilities influence IT career decisions. Findings from this article show that greater consideration is needed of a range of factors, including work-family decisions, in an attempt to better understand the gender divide in the IT workforce and workforce issues in general. This study was limited to examining the work-family perspectives of women in the IT workforce. It

did not include the role of men or the roles of noncustodial stepparents and foster parents. Finally, this study is limited to an American perspective. These limitations represent areas for future research in order to further develop the work-family balance framework. Future application of the Individual Differences Theory of Gender and IT to other constituencies will contribute continued recommendations to research and practice.

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ENDNOTES

- ¹ There are two caveats to this discussion. First, while the authors acknowledge it is also critical to understand work-family balance from a male perspective, this is outside of the scope of our article. Second, while some same-sex couples are included in this research project, the data set is not yet large enough to enable meaningful analysis. Thus, the discussion relates only to heterosexual couples.
- ² This article is from a study funded by a National Science Foundation Grant (EIA-0204246).
- ³ The 57 interviews included in this article represent a mid-point of data collection and analysis efforts. In total, 120 interviews will be conducted.

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