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Work-family conflict and wellbeing among mothers in higher education

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Work-Family Conflict and Wellbeing Among Mothers in Higher Education

Brittany S. Bilodeau

A thesis submitted to the Graduate Faculty of

JAMES MADISON UNIVERSITY

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Adult Education and Human Resource Development

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Dedication

I want to dedicate my first piece of scholarship to Dr. Tracy Zinn. From the beginning, I knew that I wanted to write my thesis about work-family conflict and issues mothers face in the workplace. I am certain that Tracy’s contagious passion and enthusiasm have been the most influential forces in my academic career. Without her support, confidence, and expertise, I would not be the person or scholar I am today. I want to say thank you from the bottom of my heart for always being such a positive role model and believing in me.
Acknowledgements

I would like to thank the faculty in the Adult Education/Human Resource Development department for their support throughout my time in the program. I especially want to thank my thesis advisor, Dr. Noorie Brantmeier, for her support and confidence throughout this project. Without her calm demeanor and assistance to overcome what felt like insurmountable challenges, I would not have been able to complete this research project.

I would also like to thank Dr. Wilcox for all of her support and guidance. You have always welcomed me with open arms and embraced me for exactly who I am. I will always be grateful for the support you have provided me throughout this process. Every day I could see that you sincerely believed in me and were committed to my success – thank you so much!
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Abstract

Numerous studies and meta analyses have been published on work-family conflict, including its antecedents and outcomes. However, the current body of literature is dominated by research that focuses on the corporate context. As a result, there is an underrepresentation of women employed in the academy. An increasing number of scholars are addressing this gap in the literature by focusing on women employed in higher education. This research serves the purpose of supporting this growing area of research. Instructional faculty members at James Madison University, who self-identified as mothers, completed a survey to assess work-family conflict, its contributing factors, and outcomes. The survey measured seven variables: work pressure, work-family culture, supervisor support, coworker support, work-family conflict, psychological wellbeing and policy fairness. Results showed that mothers at James Madison University report moderate to high levels of work pressure and work-family conflict. A multiple regression model including work pressure, work-family culture, supervisor and coworker support, and work-family conflict, explained 56% of the variance in work-family supportive culture. Forty-nine percent of the variance in work-family supportive culture is explained exclusively by supervisor support. However, analyses did not indicated a significant difference in perceived supervisor support between STEM and non-STEM departments.

Keywords: work-family conflict, supervisor support, motherhood, higher education, psychological wellbeing, role theory, interrole conflict, spillover theory, policy, and work pressure.
Chapter 1: Introduction

Women first joined the workforce during World War II to “keep the country going” while the soldiers were abroad at war. Ever since the inception of the iconic “Rosie the Riveter,” women in the workforce have grown in numbers. As women entered the workforce, society had to acknowledge a new set of issues that are specific to this demographic of employee – motherhood. As of 2012, 65% of women who work outside of the home have children under the age of six (United States Department of Labor 2014). Women entering the workforce gave rise to another new concept in the country – dual-earning couples. There is substantial evidence that there are negative perceptions in the workplace associated with motherhood. This phenomenon, often referred to as the “motherhood penalty”, has been documented on numerous occasions (Baker, 2010). For example, job applicants who are mothers are often perceived as less competent and committed than their childless counterparts (Correll, Benard & Paik, 2007). Since female workers comprise almost 50% of the workforce (United States Department of Labor, 2014) it is imperative that we understand their experiences in the workplace.

There is a substantial body of literature on the motherhood penalty, as well as work-family conflict as it pertains to women in the corporate environment. The inattention paid to women in the Academy is ironic considering the inequity that exists in the Academy for women seeking out tenured faculty positions. West and Curtis (2006) said that, “women face more obstacles as faculty in higher education than they do as managers and directors in corporate America”. However, because, “structural inequities are slow to change, in the interim many women are struggling with the issue of how (or if) to combine motherhood with a tenure-track job” (Eversole, Harvey & Zimmerman,
This “tunnel vision” excludes women in Academia from the larger conversation about work-family conflict and its outcomes.

There is a misperception that mothers in the academy somehow have it easier than women in corporate America because of the flexible hours and nature of the job. People will often look at professors and think that they only have to teach a couple of classes a few times a week so they must have more free time to be with their family. The reality, unfortunately, is strikingly different than the misperception. As Eversole, Harvey & Zimmerman (2007) stated, it is more difficult for women to get tenure than it typically is for women to become managers. The reality is that flexible work hours do not make juggling motherhood and work any easier in the academy.

A blogger on the website Mama-PhD spoke candidly about the challenges of working from home. Like many professional mothers, she experiences guilt when she is at work because she cannot be with her young child. However, she also says that working from home is no bargain either because while she is physically present, she is not available to her daughter. After recalling a heart-breaking instance where her daughter slipped love letters under her door, she expressed her fear that her presence but lack of availability is creating a deeper sense of rejection in her little girl (Tropp, 2015). This professor’s experience is not unique – flexible work schedules allow people to work from home, but it often results in working longer hours because people are at home (Fenner & Renn, 2010). The lack of attention to women in the academy leaves them virtually out of the conversation about managing professional demands with raising a family. If people can easily provide anecdotal evidence that women in the academy are struggling with
these issues too, then it necessitates that we, as researchers, take a closer look at the state of things.

**Problem Statement**

Although there is an abundance of literature on work-family conflict in the corporate sector, the experiences and outcomes of work-family conflict among women in the Academy is poorly represented.

**Purpose of the Study**

The purpose of this study is to investigate how instructional faculty members, who are mothers, are experiencing work-family conflict in their current positions at James Madison University. There is an abundance of literature discussing work-family concept as it pertains to the corporate sector (Beauregard & Henry, 2009). Less literature is available that describes issues that women face in the academy, as it pertains to work-family conflict. Misperceptions that the corporate sector is a higher stress environment than the academy creates the false illusion that women in the academy are somehow better off (Eversole, Harvey & Zimmerman, 2007). This study will help uncover the reality regarding work-family conflict among instructional faculty who are also mothers at James Madison University, a midsize public liberal arts college.

This study examined the presence of work-family conflict by focusing on the following dimensions: Perceived work-family conflict, supportive work-family culture, coworker support, work pressure, and supervisor support. In the literature, wellbeing is a broad topic with varying definitions (Ryff, 1989). This study focused on psychological wellbeing as an outcome of work-family conflict.
Research Questions

The research questions associated with this study include:

1) Are there differences in perceived supervisor support between STEM and Non-STEM faculty?

2) Does supervisory support predict perceived levels of work-family supportive culture?

3) Is there a relationship between psychological wellbeing and perceived levels of work-family conflict?

4) Is there a relationship between work pressure and work-family conflict?

5) Is there a relationship between work pressure and supervisor support?

Hypothesis 1

Research question one addresses potential differences in perceived supervisor support between STEM and non-STEM faculty. Based on the longstanding trend of a underrepresentation of women in STEM (Ramsey & Sekaquaptewa, 2013), I am anticipating that there will be a significant difference in perceived supervisor support between STEM and Non-STEM faculty. Specifically, I am expecting supervisors to be less supportive in STEM departments.

Hypothesis 2

In regard to research question two, I am expecting that supervisor support will predict how respondents will rate their department’s work-family culture (supportive, not
supportive). In particular, I am anticipating a positive relationship between supervisor support and supportive work-family culture.

**Hypothesis 3**

Based on the literature, I am expecting psychological wellbeing to be negatively related to work-family conflict. That is, I am anticipating that faculty who experience high levels of work-family conflict to also indicate that their psychological wellbeing is not optimal.

**Hypothesis 4**

Since work pressure and stress are related to one another, I am predicting that faculty members who report experiencing high levels of work pressure will also indicate that they experience a high level of work-family conflict.

**Hypothesis 5**

Research questions five addresses a potential relationship between supervisor support and work-family conflict. I am predicting that work pressure will have a significant relationship with supervisor support. Specifically, I am anticipating that supervisor support will negatively correlate with work pressure.

**Assumptions, Limitations, and Scope**

Pertinent to this study is the assumption that participants who completed the survey self-identified correctly in the demographic section of the survey. Specifically, I am assuming that faculty selected their college affiliation accurately and that they accurately reported the number and age of children that they have. It is also assumed that
all female faculty members experience work-family conflict in some form in varying degrees. Lastly, it is assumed that the population total (N=497) is somewhat inaccurate due to the unavailability of the current year’s faculty demographic data.

A primary limitation of this survey is the uncertainty of the exact value of population parameters. James Madison University’s office of institutional research publishes facts and figures about faculty demographic information every year toward the end of spring semester. This study took place prior to the 2015-2016 data being published; therefore the data from the 2014-2015 school year were used in this study. Additionally, institutional research does not collect data on the number of female faculty members who have children. It is unlikely that the entire population of female faculty members at JMU are mothers. This limitation leads the assumption that the specified population total is unrepresentative of the true value.

This study intends to explore the experiences of JMU faculty members who are mothers. Specifically, this study seeks to identify perceived levels of work-family conflict and psychological wellbeing among faculty members. This research will add to the growing body of literature regarding motherhood experiences in the Academy.
### Key Term Definitions

**Table 1**  
*Key Terms and Definitions*

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work-Family Conflict</td>
<td>“A form of interrole conflict in which the role pressures from the work (family) and family domains are mutually incompatible in some respect. That is, participation in the work role is made more difficult by virtue of participation in the family (work) role” (Greenhaus &amp; Beutell, 1985, p.77).</td>
</tr>
<tr>
<td>Role Theory</td>
<td>Describes the relationship between conflicting role expectations and conflicts that can arise (Kahn, Wolfe, Quinn, &amp; Snoek 1964).</td>
</tr>
<tr>
<td>Interrole Conflict</td>
<td>Occurs when role expectations from differing domains are at odds with one another (Kahn et al., 1964).</td>
</tr>
<tr>
<td>Spillover Theory</td>
<td>Domains of work and nonwork can spillover into one another despite special and temporal distance (Staines, 1980).</td>
</tr>
<tr>
<td>Supervisor Support</td>
<td>&quot;Caring about subordinates, valuing their contributions, helping them on work-related issues, and facilitating their skill development (Oldham &amp; Cummings, 1996; Rafferty &amp; Griffin, 2004).</td>
</tr>
<tr>
<td>Coworker Support</td>
<td>The degree of assistance enacted by work colleagues (Liao, Joshi, &amp; Chuang, 2004), which includes, &quot;the provision of caring, tangible aid, and information&quot; (Ducharme &amp; Martin, 200; Parris, 2003)</td>
</tr>
</tbody>
</table>
“Comprised of subjective wellbeing and psychological wellbeing. Subjective wellbeing involves global evaluations of affect and life quality, whereas psychological wellbeing examines perceived thriving in existential challenges in life, e.g. personal growth” (Keyes, Ryff, & Shmotkin, 2002).

The environment or community concerned with the pursuit of research, education, and scholarship, e.g. Universities and institutions of higher education (Stevenson, 2010).

“The ‘fast-track’ in Academia – the process of promotion to a position in which a professor is guaranteed permanent employment” (Eversole, Harvey, & Zimmerman, 2007).

Now that I have presented the key terms germane to this study, the following literature review will describe the relevant theoretical frameworks and literature that inform this study.
Chapter 2: Literature Review

To provide a foundational knowledge on the topics germane to this study, a literature review was completed. An impressive quantity of literature exists addressing issues of work-family conflict, motherhood and women in the workplace. Focusing the literature review on specific negative outcomes of work-family conflict and describing the academy, as a context, is necessary because women in the academy and corporate America have different experiences (Wolf-Wendel & Ward 2006; Eversole 2007). In order to address the major themes pertinent to this study, the following literature review will be presented by, first, defining work-family conflict and exploring some of the contributing factors. Next, specific constraints that hinder women from balancing their home lives and professional lives will be discussed, followed by a description of the academy and unique challenges that women face there.

The majority of the literature in the following review comes from *Journal of Occupational Health Psychology* and *Journal of Applied Psychology*. Some of the literature also was located using other research databases such as, PsycNet, ERIC, and Google Scholar. Key terms used to identify the following literature include, but are not limited to: “work-family conflict”, “psychological wellbeing” and “role theory”.

**Conceptual and Theoretical Framework**

The conceptual framework for this study explores work-family conflict as a whole, specifically isolating the supports and constraints that women experience in the academy. Work-family conflict is a broad, well-established area of research, especially as it pertains to women in the corporate context. For this reason, the unique context of this
study, the academy, will be described. Additionally, negative outcomes and identified contributing factors to work-family conflict will be discussed. The conceptual framework below illustrates the major themes that are presented and discussed in the following literature review.

This study takes a traditional theoretical approach in understanding the work-family conflict phenomenon. Role theory (Kahn et al., 1964; Katz & Kahn 1978), which describes the relationship between the many roles that people occupy and what happens when they conflict with one another, is a primary lens through which this study is viewed. Similarly, spillover theory (Staines, 1980), which describes how role demands can leak into other roles people occupy, is pertinent to consider with this study. Lastly, it is necessary to look at women’s role demands as a piece of a bigger picture. Levinson’s (1986) adult stage theory is important to consider when explaining the work-family conflict phenomenon in women’s lives.

*Figure 1. Conceptual Framework*
Theory and Contributing Factors

Historically, work-family conflict is defined as, “a form of interrole conflict in which the role pressures from the work (family) and family domains are mutually incompatible in some respect. That is, participation in the work role is made more difficult by virtue of participation in the family (work) role” (Greenhaus & Beutell, 1985, p.77). There are two facts to note regarding this definition: First, is that it the most commonly cited definition in the literature (Frone, 2003, p.145). Second, is that this definition indicates that the conflict can originate in the workplace and impact home life, or vise-versa. The literature specifies the bidirectional nature of this relationship as either family interfering with work, or family work conflict (FWC), or work interfering with family life, or (WFC) (Michel, Lindsey, Mitchelson, Clark, & Baltes, 2011, p.691). Role theory (Kahn et al., 1964) and spillover theory (Staines, 1980) are complimentary theoretical lenses for explaining the fundamental antecedent of work-family conflict.

Role theory. Greenhaus & Beutell (1985)’s definition of work-family conflict refers to an imbalance that occurs when between one’s work and family life. The beating heart of this definition is role theory, specifically role conflict and role overload. The literature on role theory originates from Khan, Wolfe, Quinn, Snoek, and Rosenthal (1964). A role is a position where recurring actions and behaviors are associated with occupying that position (Katz & Kahn, 1978). Role theory is so integral to work-family conflict because it helps explain why work-family conflict occurs in the first place. Kahn et al (1964) described two major categories of conflict that people can experience: Intra-role conflict and interrole conflict. Intra-role conflict occurs when the expectations of
roles within the same domain are conflicting with one another, whereas interrole conflict occurs when role expectations from differing domains are at odds with one another.

Based on the two types of role conflict described, interrole conflict is the most relevant to understanding work-family conflict. Women with children who are also employed full-time experience the expectations of two highly demanding roles. Kahn et al (1964) assert that work-family conflict is, “a form of interrole conflict in which the role pressures from the work and family domains are mutually incompatible in some respect.”

Related to the concept of someone coping with two conflicting roles is role overload.

*Role overload* describes a situation in which various role expectations are not necessarily incompatible with one another, but rather, there are simply too many role expectations (Kahn et al., 1964). People are only human and only capable of accomplishing so much. Role overload is related to the notion that there are not enough hours in the day. According to James Madison University’s faculty handbook (2014), professors have teaching responsibilities, scholarship requirements, and service expectations. Each of these domains are incredibly time consuming and, in all likeliness, will require tenure-tracked faculty to spend substantial time working after business hours. This is especially problematic for women who are mothers and have familial responsibilities as soon as they get home.

The last concept in role theory that must be addressed when considering work-family conflict is role pressure. As the name suggests, *role pressure*, refers to acts from role senders that attempt to influence role receivers to behave in ways that contribute to meeting role expectations (Kahn et al., 1964). Colleagues and superiors subtly influence behavior in certain ways, both intentionally and unintentionally. If there is a constant
pressure for women to “go the extra mile” to obtain tenure, then they are going to feel pressures to spend more hours and attention on their career regardless of their personal lives. This type of culture creates work-family conflict by subtly demanding that women fulfill their job expectations no matter what the costs are.

**Spillover theory.** Another related way to conceptualize work-family conflict is through Staines’ (1980) spillover theory. This theory explains that work and family are two prevailing domains of life for people. Because both personal and professional lives are so dominant and have such high demands, the emotions and behaviors from each domain can spill over to the other. This theory does not imply any specific direction of the spillover – family life can spillover into work life, and vise versa. The spillover can include domain-specific affect, skills, attitudes, and behaviors (Kando & Summers, 1971).

The nuanced difference between role theory and conflict theory is important to understand how work-family conflict can impact employees affectively and from a wellbeing point of view. If, for example, a working mother had a particularly difficult day at work the negative affect would carryover when she goes home. This would, in turn, impact how she interacts with her children and spouse. According to spillover theory, role behavior and affect has the ability to defy temporal and spatial boundaries (Staines, 1980), meaning if faculty are working in an environment that produces negative affect due to lack of support or work pressure, that negative affect has the ability to transfer into the home. It is clear how an abundance of negative affect might have a significant impact on faculty wellbeing.
**Adult development.** Developmental theory is typically associated with Jean Piaget’s stage theory of development (1986). Daniel Levinson developed a theory of development applicable to adults that follows the same stage structure. Levinson (1986) developed his theory in response to a gap in the literature. Research on adulthood did exist prior to Levinson, however it focused on specific features; for example, Erikson’s (1950, 1958, 1969) contributions to field about ego development. There was a lack of general theory for adulthood development that could unify the highly specific research that already existed.

Levinson (1986) described the life course of an adult, which he defined as, “the concrete character of a life in its evolution from beginning to end.” Based on this definition, Levinson sought to create a unifying theory that described development as a continuous process that starts at birth and ends when we die. Unlike Piaget’s (1976) stages of development, Levinson did not focus on one domain of adult (e.g., cognitive development). Consistent with his fluid view of the life cycle, his theory encompasses all aspects of life, “inner wishes and fantasies; love relationships; participation in family, work and other systems; bodily changes; good times and bad – everything that has significance in life” (Levinson, 1986, p.4).

Within the life cycle, Levinson defines three “seasons”, or large segments of time within the life cycle that are characterized by specific goals and life events (1986). The first season, preadulthood is from birth to about the age of 20, followed by approximately 45 years of adulthood, and the final season, old age, starting at 65 years. Adulthood is the longest season of life and broken into three smaller segments of time, called eras (Levinson, 1986); the three eras of adulthood are preadulthood, early adulthood, middle
adulthood, and late adulthood. The first era, early adulthood, begins around age 17 and continues until we are about 45 years old. For the purposes of this study, I will focus on the first era of adulthood because the target population, mothers in the Academy, is primarily living in this era.

Early adulthood is, perhaps, the most productive and stressful era in the life cycle because these are peak productivity years. In the 20’s and 30’s adults are typically establishing themselves and focusing on family life, occupational advancement, and realization of major life goals (Levinson, 1986). Women, in particular in this stage are likely experiencing peak levels of work-family conflict because while they are pursuing occupational advancement they are also in their childbearing years. Having a family also incurs heavy financial burdens, which intensifies the need to advance in one’s occupation, which by extension can lead to states of prolonged stress. Levinson identified through extensive interviews that, “most often, marriage-family and occupation are the central component’s of a person’s life,” regardless of era or season.

**Dual-earner couples.** A pivotal change in culture that has altered the way we think about the workplace and its interactions with the home is the introduction of dual-income households. The dual-income household is a structure in which both husbands and wives work outside of the home (Wattis, Standing, & Yerkes, 2013). In 2010, 58% of married employees were part of a dual-earning couple (Bureau of Labor Statistics, 2010a), and that number is only increasing. Men and women experience the demands of work and family differently because women generally assume more responsibility at home than men do (Gatrell, 2004). Clearly, the issue of work-family conflict is also extremely gendered, where the burden often times is placed on women, especially
mothers. The gendered nature of childcare continues to put women at a disadvantage in managing their professional lives and family lives.

While dual-earning couples is a norm in today’s society, the role of caregiving has not evolved. Working mothers and fathers work, on average, 64 hours per week (Bianchi, Robinson, and Milkie, 2006). Full-time working mothers work eight-hours per day on average (Allard & Janes, 2008), which is approximately comparable to what fathers work, on average. At first glance, this sounds like egalitarianism, but the reality is that mothers still dedicate more time to childcare. This phenomenon, where women spend their days working at their place employment and come home to do household chores and caregiving is called the second shift (Hochschild & Machung, 2012). It is clear that women in dual-earning couples bear a more significant burden in household responsibilities, therefore contributing to the imbalance in work and family roles.

Constraints

Women in the academy and corporate America face a number of constraints that prevent them from integrating their personal lives with their professional lives. Mothers, in particular face logistical issues like, getting enough time off to be with a newborn after giving birth. Legislation can help alleviate some of the stress of obtaining time off, but women in dual earner couples have to worry about securing money to supplement their income while they are on leave. Even with federal family-friendly policies available, women face serious issues of stigmatization surrounding their motherhood status and utilizing policies available to them.
**Work-family policies.** The primary piece of legislation associated with women in the workplace is the Family and Medical Leave Act of 1993 (FMLA). The FMLA entitles eligible employees of covered employers to take unpaid, job-protected leave for specified family and medical reasons with continuation of group health insurance coverage under the same terms and conditions as if the employee had not taken leave. Although this act certainly has its limitations (e.g., employees receive no pay), it does provide a certain amount of protection by ensuring that mothers will have a job to return to. In addition to this legislation, organizations in the United States began to implement various “family friendly” programmatic changes.

Another piece of legislation that is often associated with motherhood is the American Disability Act of 1991 (ADA). The American Disability Act, “prohibits discrimination against individuals with disabilities in all areas of public life, including jobs, schools and transportation, and all public and private places that are open to the general public”. At first glance it may be difficult to see how legislation enacted to protect individuals with disabilities relates to working mothers. As previously discussed, FMLA ensures a woman cannot lose her job for going on maternity leave, however, it does not ensure she will get *paid* time off. A common way of getting around this lack of financial security, women typically apply for short-term disability. According to the Virginia supplemental short-term disability benefit (2010), this covers as much as 66% of monthly income.

To support the changing identity of the modern worker, organizations implemented policies that catered to parents, especially mothers, in the workplace. Examples of these family-supportive policies include flexible work hours, on-site
childcare, and telecommuting (Hill, Allen, Blanchard, Matz-Costa, Shulkin, & Pitt-Catsouphes, 2008). The aforementioned benefits are offered, at least in part, by many organizations. Beauregard and Henry (2009) found that work-family supportive policies improve employee satisfaction by reducing work-family conflict. In conjunction with the Family and Medical Leave Act of 1993 and Disability Act of 1990, it is reasonable to say that there are support structures in place for working mothers. These support structures can provide working mothers with resources to reduce work-family conflict.

**Policy stigmatization.** Despite the legislative and targeted programmatic efforts, work-family conflict remains a prevalent issue among women in the workforce today. The continuing presence of work-family conflict among mothers even with structural and legislative support suggests that policy is not enough to ameliorate work-family conflict. One study analyzed the connection between negative perceptions of caregiving in the workplace and the phenomenon of engaging in behaviors to avoid that bias (Drago et al., 2006). Even today the bias that exists against mothers in the workplace can produce tangible negative effects, such as lack of career advancement. Understandably, women engage in behaviors to avoid being stigmatized by their motherhood status in the workplace. The manifestation of these behaviors is referred to as *bias avoidance* (BA).

Considering women’s impulse to avoid the bias associated with motherhood in the workplace, it makes sense that they may decline to take advantage of the family-friendly policies offered by their organization. This type of avoidance bias is referred to as unproductive bias avoidance. It is unproductive because the female employee is avoiding bias by declining to take advantage of a policy intended to help reduce work-family conflict. This behavior, in turn will either have no effect on her work performance
or diminish it – but it certainly will not improve it (Drago et al., 2006). Engaging in unproductive avoidance bias is one way to explain why women still experience work-family conflict despite the provided programmatic and policy efforts.

Cultural norms. There is a longstanding history of negative perceptions of motherhood in the workplace. This phenomenon, often referred to as the “motherhood penalty”, has been documented on numerous occasions (Halpert, Wilson, & Hickman 1993; Baker, 2010). For example, job applicants who are mothers are often perceived as less competent and committed than their childless counterparts (Correll, Benard & Paik, 2007). Employee competence is often called into question when women are pregnant or have children. In one study, participants evaluated management profiles that varied based on sex and parental status (Fuegen et al., 2004). This study found that female consultants were rated as less competent when they had children. What makes this finding so interesting is that men with children were not perceived the same way. The issue clearly goes beyond just gender – there is a legitimate bias against mothering in the workplace. Furthermore, other western counties, who have equally strong economies, are not as discriminatory towards motherhood. In Norway, for example, maternal leave after childbirth is an impressive forty-two weeks with full pay (Ronson & Kitterod, 2015).

Work-Family Support

Work-life balance has implications for employee attitudes, as well as organizational effectiveness (Eby et al., 2005). The literature identifies two important sources of support for working mothers. As previously discussed, policy alone is inadequate for reducing work-family conflict. The literature identifies two importance
social supports for working mothers – supervisor support and coworker support (Rousseau & Aube, 2010). The behavior of supervisors is especially important, so they should be encouraged to convey a family friendly climate (Hammar, Kossek, Yragui, Bodner, & Hanson, 2009). In conjunction with work-family supportive policy, supervisor and coworker support make a significant impact in reducing work-family conflict (Allen, 2001).

**Supervisor and coworker support.** Clearly, there are situations where women in the workforce are not taking advantage of the options available to them, e.g. flexible work hours or telecommuting. If bias avoidance is a contributing factor, the literature has identified potential solutions to aid with this issue. Supervisor and coworker support also play important roles in addressing this issue. Supervisor support is, “caring about subordinates, valuing their contributions, helping them on work-related issues, and facilitating their skill development (Oldham & Cummings, 1996; Rafferty & Griffin, 2004). Supervisors have the ability to help working mothers gain access to and feel comfortable using work-family initiatives in place within their organization (Straub, 2012). In addition to helping employees access work-family initiatives, research has shown that supervisory support is more effective in reducing work-family conflict than the presence of policy alone (Allen, 2001; Munir, Nielsen, Garde, Albertsen, & Carneiro, 2012).

Coworker support is the degree of assistance enacted by work colleagues (Liao, Joshi, & Chuang, 2004), which includes, "the provision of caring, tangible aid, and information" (Ducharme & Martin, 2000). Supportive colleagues contribute to increasing affective organizational commitment by creating an inclusive environment. For working
mothers there will inevitably be times when they have to leave work early or come in late due to family emergencies. Children, especially when they are young, get sick frequently. Since mothers are still primarily responsible for caregiving (Hochschild & Machung, 2012), they are often the parent picking their children up from school, taking them to doctor’s appointments, etc. Having colleagues who are willing to fill in for you, or simply understand your other commitments helps to buffer against work-family conflict issues (Rousseau & Aube, 2010).

**Childcare.** Dual-earning couples are the “standard” in the United States today. Prior to children entering school, someone has to physically be able to care for the children. A primary issue that is a source of stress for mothers in the workplace is childcare (Wattis et. al, 2013). Due to the time requirements of full time employment mothers often cannot stay home and care for their children. However, it is expensive to pay for high quality childcare. Not only is childcare an expensive necessity for dual earning couples, it is still almost exclusively the responsibility of the mother to arrange the childcare (Sperling, 2013). The added responsibility of ensuring children are cared for contributes to the overwhelming demands of the motherhood role.

**Work-Family Conflict Outcomes**

Over the years, relationships between work-family conflict and a number of negative outcomes have been identified. Negative health and psychological outcomes have been positively related to high levels of stress and work-family conflict (Gryzwacz, 2000; Kinnunen, Feldt, & Pulkkinen, 2006). The negative impacts of work-family conflict extend beyond just the employee – organizations feel the effects too. Excessive
workload and hours spent at work have been linked to workplace deviance, decreased productivity, decreased organizational commitment, and job satisfaction. There can be no doubt that work-family conflict is a legitimate issue that has negative impacts on both people and organizations.

**Decreased productivity.** Employees may find that the source of their interrole conflict is directly impacted by their workload at their place of employment. In the work domain, long work hours are consistently related to work interfering with family life (Byron, 2005). There is often the assumption that the more hours an employee works, the more work they can accomplish. It turns out that excessive workload may have unforeseen consequences to organizations. It is logical to assume that an excessive workload increases productivity, and increases positive outcomes for organizations. However, this approach may have the opposite effect on productivity and may ultimately be detrimental to organizational success.

Excessive workload that keep employees at work for an unreasonable number of hours has detrimental effects on employee wellbeing (Bowling & Kirkendall, 2012; Bowling, Alarcon, Bragg, & Hartman, 2015) and productivity. Ferguson, Carlson, Hunter, & Whitten (2012) found that not only can work-family conflict can lead to decreased productivity, but it can also cause an increase in production deviant behaviors. Production deviance refers to the violation of organizational norms with respect to the quantity and quality of work an employee performs (Hollinger & Clark, 1982). Examples of production deviance include, but are not limited to: withdrawal from work, daydreaming while at work, and arriving late or leaving early from work (Ferguson et al., 2012, p.247).
**Employee wellbeing.** Although there is a substantial body of literature on wellbeing, there is often debate surrounding what exactly wellbeing is. The literature identifies two major classifications of wellbeing – *subjective wellbeing* and *psychological wellbeing*. The general happiness that people often associate with wellbeing describes subjective wellbeing (Paige & Vella-Brodrick, 2009). Psychological wellbeing consists of three things: life satisfaction, positive affect, and negative affect – where happiness is the balance of positive and negative affect (Keyes, Shmotkin & Ryff, 2002). Psychological wellbeing is a more comprehensive and stable measure of wellbeing than subjective wellbeing, and for that reason, this study will focus on psychological wellbeing.

In the last decade or so, contributions to the literature have identified that employee wellbeing impacts outcomes in work settings (Paige & Vella-Brodrick, 2009). For example, “research has highlighted the detrimental effects of stress and psychological distress on individuals and organizations, which include poor physical health, reduced performance, absenteeism, and turnover (Panaccio & Vandenberghe, 2009). In fact, research consistently shows a negative relationship between work-family conflict and health and wellbeing (Allen et al., 2000; Bellavia & Frone 2005).

Working parents struggle to honor their work and family commitments and often describe feelings of stress and psychological pressure (Schneider, 2011). Additionally, there is research to support the notion that employee wellbeing and job satisfaction is related to turnover. Wright and Bonnet (2007) found that job satisfaction and wellbeing have a negative impact on turnover – that low levels of wellbeing and job satisfaction correlated negatively with employee turnover. Clearly, conditions that implicate employee wellbeing are detrimental to both organizations and employees.
**Job satisfaction and organizational commitment.** Affective organizational commitment refers to the emotional attachment that an employee feels for the organization or institution for which they work (Solinger, Van Olffen, & Roe, 2008). Clearly, it is important for employees to feel positive emotions for the organization they spend half of their adult lives in. Additionally, organizations can only benefit from their employees being committed to the work that they do. When people feel that the organization they work for genuinely cares about them, they become more committed to the success of the organization (Liao, 2011). For this reason, it is important for employers to make an effort to create an environment that encourages employees to feel supported and valued, in order to get the best work out of their employees.

As previously mentioned, supervisor and coworker support are important social resources that help mothers feel empowered to utilize policies intended to help them. Supervisor and coworker support are also instrumental in increasing organizational support (Rousseau & Aube, 2010), and have been found to predict job satisfaction, in addition to organizational support (Baruch-Feldman, Brondolo, Ben-Dayan, & Schwartz, 2002). The literature is clear that supervisor support and other social supports are irreplaceable for ensuring positive employee outcomes.

**Mothering in the Academy**

As women have been active members of the workforce for such a long time there is, understandably, a substantial amount of information already available on mothers in the workplace. The majority of this information refers to women in corporate environments, which leaves mothers in academia out of the conversation. In the corporate
context, one may have several options or “routes” on the path of success. In the Academy, however, there are essentially two tracks – tenure and non-tenure. Tenure-track is the desirable track to take since it provides a great deal of job security. The statistics clearly show that something is going on in academia with mothers. Even after Title IV, only 36% of female instructional faculty were tenured, on average (Mason, Stacy & Goulden, 2004). Additionally, only one third of women in the fast-track academic jobs ever become mothers.

While it is still possible for blatant discrimination to take place, it appears more likely that the discrimination occurs in a more subtle way. The recipe for acquiring tenure is a combination of long work hours, frequent travel and regular publication. As it turns out, this coincides with the childbearing years for most women in academia (Mason, Stacy, & Goulden, 2004). This is one possible explanation for the disproportionate number of women in academia who have tenure and are also mothers. Women are either sacrificing motherhood in favor of tenure, or opting out of the tenure-track in order to have families (Eversole, Harvey & Zimmerman, 2007). Another study found that regardless of the type of institution of higher education, concerns about timing of having children was a major concern (Wolf-Wendel & Ward, 2006).

The experiences of women who are childless may involve a quicker route to tenure, but it can also involve more extreme workloads. While it is easy to focus on discrimination of mothers in any work environment, especially academia, it is not the only perspective. According to some childless women in academia, they are singled out and consequently given large amounts of work compared to their colleagues who are mothers (Cummins, 2005). A study found that “54% of childless career women reported
that they were expected to pick up the extra work for colleagues who had children” (Hewlett, 2002, p.288). These findings suggest that single women are perceived as having more free time to complete excessive amounts of work. The problem with this interpretation is that it denies the private lives of these childless women.

The expansive body of literature available about work-family conflict identifies several contributing factors and outcomes. The majority of the research completed to date speaks to the corporate context and is not necessarily transferrable to women employed in other contexts. The academy is a unique setting where in order to be successful, you must be tenure-tracked, and obtaining tenure is extremely difficult – especially for women. The survey instrument I developed for this study focuses on assessing outcomes and contributing factors that have been identified in the literature. Details on the specific measures and procedures utilized in this study are presented in the following methodology chapter.
Chapter 3: Methodology

In order to assess the presence and degree of work-family conflict and wellbeing among female instructional faculty at JMU who identify as mothers, I developed a comprehensive survey. The survey assessed the following domains: work pressure, supportive work-family culture, supervisor support, coworker support, work-family conflict, and wellbeing. At the end of the survey there is also a scale to assess perceptions of policy fairness. In this chapter, I describe the research design utilized, instrumentation, the data collection procedures, and data analysis procedures. Additionally, I describe population and sample characteristics, as well as discuss the limitations of the current study. In this chapter, I also discuss, the research design utilized, the population and sample, instrumentation, data collection procedures, data analysis, and limitations of this study.

As mentioned in chapter 1, the research questions associated with this study are:

1) Are there differences in perceived supervisory support between STEM and Non-STEM faculty?

2) Does supervisor support predict perceived levels of work-family supportive culture?

3) Is there a relationship between psychological wellbeing and perceived levels of work-family conflict?

4) Is there a relationship between work pressure and work-family conflict?

5) Is there a relationship between work pressure and supervisor support?
Research Design

This study was designed using quantitative research methodology. Specifically, this study utilized survey research methods because these methods enable researchers to efficiently reach a large number of participants without spending an abundance of money. One of the primary issues of concern when implementing survey research is the clarity of questions because these measures are self-administered (Remler & Van Ryzin, 2010). Work-family conflict and wellbeing are both well developed in the literature, so I was able to use well-established scales that already have reliability estimates calculated. Survey research is also an attractive option from a data management perspective. The use of verified scales not only allows me to have confidence in the data produced from the survey, but it also allows me to have a sense of clarity while interpreting the data (Schuman & Presser, 1981).

Close-ended items rated on a continuum scale (e.g., a Likert scale) allow respondents enough freedom to express their opinions and attitudes about a topic while eliminating ambiguity. Research studies that utilize qualitative methods, like interviews, are faced with social desirability issues (Fowler, 2009). Self-administered survey methods may allow respondents to feel less judged, and therefore experience less pressure to respond in a socially desirable way (rather than truthfully).

Sample and Population

The target population for this study is a instructional faculty who are mothers at James Madison University (JMU). This study utilizes purposive sampling methods. While random sampling is ideal, purposive sampling methods are often utilized when
researchers, “use their judgment to select a sample that they believe, based on prior knowledge, will producer the data they need” (Fraenkel, Wallen, and Hyun, 2012). In this study, I have already determined that my target population is instructional faculty at James Madison University; therefore participants were contacted through the university’s bulk email system to request their participation in the study.

Participants in the current study are instructional faculty, of varying status, at James Madison University, who are also mothers. According to the department of institutional research (2014) 479 of the 993 instructional faculty self-identify as women. A total of 121 participated in this study. Of those, 105 (87%) identified as female and 16 (13%) identified as male. For the current study, male respondents and incomplete surveys were not included in analyses, which reduced the sample size to 73. Sixty (80%) respondents were married or in a domestic partnership. For self-reported college affiliation there were 14 faculty members (19%) in the college of arts and letters, 8 (11%) in the college of business, 10 (14%) in the college of education, 26 (36%) in the college of health and behavioral sciences, 3 (4%) in the college of science and mathematics, 2 (3%) in the college of visual and performing arts, and 6 (8%) in libraries and educational technologies. There was a 12% survey dropout rate in this study.

I created a survey using Qualtrics, an online survey tool, to address the aforementioned research questions. The instrument was comprised of 47 quantitative items, including demographic questions. The first four items on the survey collected demographic information of the participants. Subsequent items came from the following verified scales: 12-item BBC Wellbeing Scale (Chronbach’s Alpha= .934), 4-item Work Pressure (Chronbach’s Alpha= .934), 4-item Supportive Work-Family Culture
(Chronbach’s Alpha= .71), 5-item Supervisor Support (Chronbach’s Alpha=.86), Coworker Support (Chronbach’s Alpha=.75), and 5-Item Work-Family Conflict (Chronbach’s Alpha=.87), and Policy Fairness Scale (Chronbach’s Alpha=.95). The Work-family conflict scale was reverse coded, meaning a high score on this scale equates to a low level of work-family conflict. The full versions of these scales can be found in the Appendix B.

Table 2

<table>
<thead>
<tr>
<th>Variable</th>
<th>Items</th>
<th>Example Item</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographics</td>
<td>4</td>
<td>Please indicate your faculty status</td>
<td>-</td>
</tr>
<tr>
<td>Work-Family Culture</td>
<td>4</td>
<td>There is an unwritten rule at my place of employment that you can’t take care of family needs on company time.</td>
<td>Dolcos, S. M., &amp; Daley, D. (2009)</td>
</tr>
<tr>
<td>Supervisor Support</td>
<td>5</td>
<td>My supervisor is understanding when I talk about personal or family issues that affect my work</td>
<td>Dolcos, S. M., &amp; Daley, D. (2009)</td>
</tr>
<tr>
<td>Coworker Support</td>
<td>3</td>
<td>I have the support from coworkers that I need to do a good job</td>
<td>Dolcos, S. M., &amp; Daley, D. (2009)</td>
</tr>
<tr>
<td>Work-Family Conflict</td>
<td>5</td>
<td>Have you not had enough time for your family or other important people in your life because of your job</td>
<td>Dolcos, S. M., &amp; Daley, D. (2009)</td>
</tr>
</tbody>
</table>
Psychological Wellbeing  12  0.934  Do you feel depressed or anxious  Kinderman, P., Schwannauer, M., Pontin, E., & Tai, S. (2011)

Policy Fairness  9  0.95  It is not the university's responsibility to provide paid time off to new parents  Grover, S. L. (1991)

Data Collection Procedures

Institutional Review Board (IRB) approval was obtained on November 30, 2015. And addendum addressing the addition of a demographic question was submitted and approved on December 3, 2015. An additional addendum was submitted and approved on March 25, 2016 updating the research questions in the current study. Utilizing JMU’s bulk mail system, all instructional faculty members received an email inviting them to participate in the current study. The email consisted of a description of the study, the informed consent form, and link corresponding to the survey instrument. The survey became active when the bulk email invitation was deployed by James Madison University on January 28, 2015. The survey remained active for two weeks before it was closed on February 15, 2016. A total 1506 faculty received the invitation; However this number included male instructional faculty, who are outside of the scope of this research.

Data Analysis

This study consists of exclusively quantitative data, therefore only requiring quantitative methods of analysis. Descriptive statistics and inferential statistics were used
to address the research questions in this study. Microsoft Excel was used to rid the dataset of invalid or unusable cases prior to uploading it into the Statistical Software for the Social Sciences (SPSS). All of the data analyses, both descriptive and inferential, were executed in SPSS software. Statistical procedures that were used in this study include, $t$-tests, multiple regression, and correlation analysis. Effect size for regression and correlation analyses were determined using Cohen’s index of effect size (1988), where .1 is a small effect, .3 is a moderate effect, and .5 is large effect.

Limitations

The survey instrument in this study is comprised of validated scales, therefore construct validity and reliability are not limitations of this study. However, the target population is extremely specific, making generalizability an issue. For example, approximately 83% of Harrisonburg’s population identify as “White” (US Census Bureau, 2013), so the faculty responses may be racially homogenous. Additionally, I did not collect racial or ethnic demographics in this study, which makes it impossible to know the racial background of participants.

The survey response rate was approximately 15% in the current study, which also impacts generalizability. The survey instrument was exceptionally long (47 items) which may have contributed to the low response rate. The research design for this study did not include qualitative methods, so the information captured by the survey instrument may be inadequate in fully describing the experiences of faculty participants.
Threats

The primary threats to this study include the identification of population parameters and survey instrumentation. The Office of Institutional Research at James Madison University publishes annual reports at the conclusion of each academic year. The official number of instructional faculty was not made public while the study was being conducted. For this reason, the reported population of 479 instructional faculty reflects the 2014-2015 academic year. This will undoubtedly result in a discrepancy between the reported population parameter and the true value. Additionally, the Office of Institutional Research does not identify how many instructional faculty members have children. This also made a precise estimation of the population impossible. It is likely that the parameter of 479 is overestimating the true value.

Protection of Human Subjects

In the email requesting their participation, participants were informed that this study obtained IRB approval. This survey posed minimal risk to the participants who consented to complete the survey. The consent form was included in the bulk email request as well as on the first page of the survey instrument. Participants were informed in the survey instrument that by clicking next they gave informed consent to participate in the study. The demographic information collected in the survey is not detailed enough that individual respondents could be identified. All respondent data was stored and analyzed on my personal, password-protected computer. With the exception of my thesis advisor, nobody else had access to, or viewed the data from this study. Data were destroyed after all data analysis was complete.
Chapter 4: Findings

In this section, I present the finding obtained from the survey instrument utilized in this study. First, I discuss the survey response rate and demographic information. Next, I present descriptive data for each scale that was included in the survey, followed by the results of the statistical analyses that I computed to address each research question.

Qualtrics recorded a total of 138 surveys started and 121 surveys completed, which equates to a 12% dropout rate. Of the 121 completed surveys, female respondents completed 105 of the surveys. All partially completed survey data were excluded from analyses, leaving 72 valid participant responses for each survey item. Seventy-two respondents equates to a 15% response rate. The survey was deployed on January 28, 2016 and was left active for approximately two weeks, until it was deactivated on February 15, 2016. Seventy-eight percent (n= 107) of all response were completed on the first day; responses declined significantly after the first day.

Demographics

The first four questions on the survey asked respondents the following demographic questions: Gender most identified with, marital status, faculty status, and college affiliation. The full results of the four demographic items are displayed in Table 3.1. Gender was used as a factor for eliminating male responses, as they were not applicable to this study. Prior to deleting all male data, 87% (n=105) of respondents self-identified as “female”, 13% (n= 16) identified as “male”, and 0% (n=0) of respondents identified their gender as “other”. The overwhelming majority (80%) of respondents reported that they were married, while only 3% reported that they were single.
Respondents were also asked to identify how many children they care for, by age group. This demographic item had five age categories (<1 year [infant], 1-5 years, 6-11 years, 12-17 years, 18+ years) that participants responded to using a four-point Likert scale (None, one, two, three, four or more). The results of this item are displayed in Table 3.3. The majority of respondents care for at least one minor aged newborn to 17 years old, with the majority of mothers caring for a child aged 6-11 years old (n=20).

Approximately 31% of the respondents are considered “non-tenure track”, which is comprised of the adjunct/part-time faculty and instructors. The remaining 69% of the respondents are assistant professors (n=25), associate professors (n=15), or full professors (n=10), and are, therefore, “tenure-track”. Respondents were asked to select the college that their department is affiliated with from a dropdown menu. For the purposes of this study, colleges were sorted into “STEM” or “Non-STEM” categories. The following colleges are classified as STEM: College of Health & Behavioral Sciences, College of Integrated Science & Engineering, and College of Science & Mathematics. Non-STEM colleges include, the College of Arts & Letters, College of Business, College of Education, College of Visual & Performing Arts, and Libraries & Educational Technologies. Forty-five percent (n= 33) of respondents are classified as STEM faculty and 54% (n=40) of respondents are classified as Non-STEM faculty.
Table 3.1  
*Participant Demographic Information*

<table>
<thead>
<tr>
<th>Category</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Faculty Status</strong></td>
<td></td>
</tr>
<tr>
<td>Adjunct/Part-Time</td>
<td>11 (15%)</td>
</tr>
<tr>
<td>Instructor</td>
<td>12 (16%)</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>25 (34%)</td>
</tr>
<tr>
<td>Associate Professor</td>
<td>15 (21%)</td>
</tr>
<tr>
<td>Full Professor</td>
<td>10 (14%)</td>
</tr>
<tr>
<td><strong>College Affiliation</strong></td>
<td></td>
</tr>
<tr>
<td>College of Arts &amp; Letters</td>
<td>14 (19%)</td>
</tr>
<tr>
<td>College of Business</td>
<td>8 (11%)</td>
</tr>
<tr>
<td>College of Education</td>
<td>10 (14%)</td>
</tr>
<tr>
<td>College of Health &amp; Behavioral Sciences</td>
<td>26 (36%)</td>
</tr>
<tr>
<td>College of Integrated Science &amp; Engineering</td>
<td>3 (4%)</td>
</tr>
<tr>
<td>College of Science &amp; Mathematics</td>
<td>4 (6%)</td>
</tr>
<tr>
<td>College of Visual and Performance Arts</td>
<td>2 (3%)</td>
</tr>
<tr>
<td>Libraries &amp; Educational Technologies</td>
<td>6 (8%)</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>3 (4%)</td>
</tr>
<tr>
<td>Married/Domestic Partnership</td>
<td>60 (82%)</td>
</tr>
<tr>
<td>Divorced/Widowed</td>
<td>10 (14%)</td>
</tr>
<tr>
<td><strong>Total n</strong></td>
<td>73</td>
</tr>
</tbody>
</table>

Table 3.2  
*Frequencies of “Number of Children” by Age Group*

<table>
<thead>
<tr>
<th>Age Group</th>
<th>None</th>
<th>One</th>
<th>Two</th>
<th>Three</th>
<th>Four or More</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1 (Infant)</td>
<td>64</td>
<td>9</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1-5 yrs.</td>
<td>58</td>
<td>11</td>
<td>4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6-11 yrs.</td>
<td>53</td>
<td>12</td>
<td>7</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>12-17 yrs.</td>
<td>58</td>
<td>10</td>
<td>5</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>18+ yrs.</td>
<td>54</td>
<td>9</td>
<td>8</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
Survey Scale Descriptive Statistics

Participants (N=73) responded to items measuring seven different constructs. Descriptive statistics were calculated for each of the scales and are reported in Table 3.3. The average score on the work pressure scale (M=3.25, SD=. 325) indicates that, overall, respondents experience high levels of work pressure. Similarly, respondents report that they experience a moderate to high level of work-family conflict (M=2.59, SD=. 97). The average scores for supervisor support (M=3.00, SD=. 61) and coworker support (M=2.92, SD=. 78) indicate that respondents “agree” that they have adequate supervisor and coworker support in their work environment. Due to the relatively high mean scores for supervisor and coworker support, it makes sense that respondents indicated that their departments adopt a work-family supportive culture (M=2.18, SD=. 71). The mean score on the psychological wellbeing scale was M=3.57 (SD=. 62) out of 5.00, which indicates that faculty have a moderately high sense of wellbeing. Lastly, respondents indicated that the work-family supportive policies at JMU are, at least, moderately fair (M=2.44, SD=1.06).

Table 3.3
Means and SDs of Survey Scales

<table>
<thead>
<tr>
<th>Scale</th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work Pressure</td>
<td>73</td>
<td>3.25</td>
<td>0.8</td>
</tr>
<tr>
<td>Work-Family Culture</td>
<td>73</td>
<td>2.18</td>
<td>0.71</td>
</tr>
<tr>
<td>Supervisor Support</td>
<td>73</td>
<td>3.00</td>
<td>0.61</td>
</tr>
<tr>
<td>Coworker Support</td>
<td>73</td>
<td>2.92</td>
<td>0.78</td>
</tr>
<tr>
<td>Work-Family Conflict</td>
<td>73</td>
<td>2.59</td>
<td>0.97</td>
</tr>
<tr>
<td>Psychological Wellbeing</td>
<td>73</td>
<td>3.57</td>
<td>0.62</td>
</tr>
<tr>
<td>Policy Fairness</td>
<td>73</td>
<td>2.44</td>
<td>1.06</td>
</tr>
</tbody>
</table>
Research Question 1: Are there differences in perceived supervisor support between STEM and Non-STEM faculty?

Non-STEM faculty (M= 2.87, SD=. 63) indicated slightly higher levels of supervisor support than STEM faculty (M=3.10, SD=.59). Table 3.4 displays means and standard deviations for each of the seven scales by department affiliation (STEM and Non-STEM). An independent-samples t-test was conducted to compare perceived supervisor support in STEM and Non-STEM faculty. The t-test determined that the difference in scores for STEM (M= 2.87, SD=. 63) and Non-STEM (M=3.10, SD=.59) faculty was not a significant effect, t (71) = -1.595, p=. 115.

Table 3.4
Means and SDs of Survey Scales by Department Affiliation (N=73)

<table>
<thead>
<tr>
<th></th>
<th>Mean (SD)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>STEM n=33</td>
<td>Non-STEM n=40</td>
<td></td>
</tr>
<tr>
<td>Work Pressure</td>
<td>3.39 (.82)</td>
<td>3.13 (.78)</td>
<td></td>
</tr>
<tr>
<td>Work-Family Culture</td>
<td>2.30 (.72)</td>
<td>2.08 (.69)</td>
<td></td>
</tr>
<tr>
<td>Supervisor Support</td>
<td>2.87 (.63)</td>
<td>3.10 (.59)</td>
<td></td>
</tr>
<tr>
<td>Coworker Support</td>
<td>2.83 (.84)</td>
<td>2.99 (.73)</td>
<td></td>
</tr>
<tr>
<td>Work-Family Conflict</td>
<td>2.44 (1.02)</td>
<td>2.72 (.92)</td>
<td></td>
</tr>
<tr>
<td>Psychological Wellbeing</td>
<td>3.62 (.49)</td>
<td>3.52 (.71)</td>
<td></td>
</tr>
<tr>
<td>Policy Fairness</td>
<td>2.40 (1.07)</td>
<td>2.47 (1.06)</td>
<td></td>
</tr>
</tbody>
</table>

Research Question 2: Does supervisory support predict perceived levels of work-family supportive culture?

A multiple linear regression was calculated to predict work-family supportive culture based on the following scales that should be theoretically related: Work family pressure, supervisor support, coworker support, and work-family conflict. A significant
regression equation was found \(F(4,13) = 21.691, p < 0.000\), with \(R^2\) of .561, adjusted \(R^2\) of .535. Work pressure, supervisor support, and coworker support were found to be significant predictors of work-family supportive culture. Table 3.5 shows that supervisor support explains approximately 49\% (\(\beta = .491\)) of the variance in work-family supportive culture.

**Table 3.5**

*Summary of Regression Analysis for Variables predicting Work-Family Supportive Culture*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(B)</td>
<td>SE (B)</td>
<td>(\beta)</td>
<td>(t)</td>
</tr>
<tr>
<td>Work Pressure</td>
<td>0.237</td>
<td>0.114</td>
<td>0.268*</td>
<td>2.082</td>
<td>0.041</td>
</tr>
<tr>
<td>Supervisor Support</td>
<td>-0.567</td>
<td>0.138</td>
<td>-0.491**</td>
<td>-4.116</td>
<td>0.000</td>
</tr>
<tr>
<td>Coworker Support</td>
<td>-0.243</td>
<td>0.102</td>
<td>-0.269*</td>
<td>-2.379</td>
<td>0.02</td>
</tr>
<tr>
<td>Work-Family Conflict</td>
<td>0.145</td>
<td>0.098</td>
<td>0.198</td>
<td>1.479</td>
<td>0.144</td>
</tr>
<tr>
<td>(R^2)</td>
<td>0.561</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: *\(p < .05\) **\(p < .01\)*

**Research Question 3: Is there a relationship between psychological wellbeing and perceived levels of work-family conflict?**

Respondents report (See Table 3.3) having moderate to high levels of psychological wellbeing (\(M=3.57, SD=.63\)) and experience a moderate to high level of work-family conflict (\(M=2.59, SD=.97\)). Correlation analyses determined that psychological wellbeing is moderately correlated with perceived levels of work-family conflict, \(r=.412, p<.01\). Specifically, as scores decrease on work-family conflict (which indicates a high level of work-family conflict), psychological wellbeing scores also decrease. Therefore, the hypothesis for this research question is supported by the data –
as levels of perceived work-family conflict increase, psychological wellbeing also decreases. See table 3.6 for a complete correlation matrix of all seven of the survey scales.

Table 3.6
Summary of Correlations Between Mean Scores of Survey Scales (n=73)

<table>
<thead>
<tr>
<th></th>
<th>WP</th>
<th>WFCL</th>
<th>SS</th>
<th>CS</th>
<th>WFC</th>
<th>PWB</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>WP</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WFCL</td>
<td>.487*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SS</td>
<td>-.526*</td>
<td>-.706*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS</td>
<td>-.426*</td>
<td>-.620*</td>
<td>.687*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WFC</td>
<td>-.772*</td>
<td>-.418*</td>
<td>.558*</td>
<td>.503*</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PWB</td>
<td>-.339*</td>
<td>-.226</td>
<td>.342*</td>
<td>0.186</td>
<td>.412*</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>PF</td>
<td>0.123</td>
<td>0.099</td>
<td>0.036</td>
<td>-0.127</td>
<td>-0.148</td>
<td>-0.064</td>
<td>-</td>
</tr>
</tbody>
</table>

Note: **Correlation is significant at the 0.01 level (2-tailed). WP= Work Pressure, WFCL= Work-Family Culture, SS= Supervisor Support, CS= Coworker Support, WFC= Work-Family Conflict, PWB= Psychological Wellbeing, PF= Policy Fairness.

Research Question 4: Is there a relationship between work pressure and work-family conflict?

As previously shown in Table 3.3, respondents report experiencing moderate to high levels of work pressure and work-family conflict. In order to address research question four, correlation analyses were computed to determine if these variables are statistically related. According to the analysis (See Table 3.6), work pressure is strongly correlated with perceived levels of work-family conflict, \( r = -.772, p < .01 \). The negative value of Pearson’s r indicates an inverse relationship, where work pressure scores tend to increase as work-family conflict scores decrease. As previously mentioned, a low score on the work-family conflict scale indicates a high incidence of work-family conflict.
Therefore my hypothesis is supported by the results of this analysis – high levels work pressure is related to high levels of work-family conflict.

**Research Question 5: Is there a relationship between work pressure and supervisor support?**

Respondents indicated that, overall they “agree” their supervisors are supportive ($M=3.00$, $SD=.61$). However, they also report that they do experience a high level of work pressure ($M=3.25$, $SD=.80$). In Table 3.6, it can be seen that supervisor support and work pressure are strongly, inversely correlated, $r= -.526$, $p<.01$. This means that as levels of perceived supervisor support increase, the level of work pressure experienced tends to decrease. This finding is consistent with my hypothesis that supervisor support has a significant relationship with work pressure, where supervisor support is negatively correlated with work pressure.

In this chapter, I presented the results of the statistical analyses performed on the data in this study. A quantitative survey design was utilized for this study due to the availability of well-established and valid scales in the field. I was able to address each of the five research questions from the data collected using the survey instrument that consisted of seven scales to measure work-family conflict outcomes and contributing factors. In the final chapter I will discuss my conclusions, limitations of the study, and recommendations for future research.
Chapter 5: Discussion and Conclusions

In this final chapter, I will discuss the key findings of my study as well as discuss the implications of these findings. I will also discuss the limitations of this study and describe recommendations I have for future studies. This study was conducted to gain a sense of the experiences of instructional faculty who are mothers at James Madison University. I sought to understand how our faculty are balancing the demands of their personal and professional lives in the academy. In order to assess this broad question I developed a survey using several scales to assess several domains of respondents’ lives.

Overview of Key Findings

Below are the five initial research questions I sought to answer in this research study:

1) Are there differences in perceived supervisory support between STEM and Non-STEM faculty?

2) Does supervisory support predict perceived levels of work-family supportive culture?

3) Is there a relationship between psychological wellbeing and perceived levels of work-family conflict?

4) Is there a relationship between work pressure and work-family conflict?

5) Is there a relationship between work pressure and supervisor support?
I was able to use the data I collected from the survey instrument I developed to address each of the aforementioned research questions. The first research question was posed to address an issue that is longstanding – women’s presence, or lack thereof, in STEM fields. In the United States, 42% of all Ph.D.s in science and engineering are held by women (National Science Foundation [NSF] 2013a). Despite so many women obtaining advanced degrees in the sciences and engineering, women still only account for 28% of tenure track faculty positions in science and engineering. The literature has identified supervisor support and other social resources (Allen 2001) as influential in mediating work-family conflict. Combined with the fact that women are made to feel uncomfortable in STEM departments (Ramsey & Sekaquaptewa, 2013), I hypothesized that there would be a significant difference in perceived supervisor support between STEM and Non-STEM departments.

However, the $t$-test did not identify a statistically significant difference in perceived supervisor support between STEM and Non-STEM departments. There are two ways to interpret this finding. First is that, perhaps, at James Madison University the leadership in STEM departments do not conform to the notion that women in STEM are treated as unwelcome. It is entirely possible that supervisors are genuinely supportive and understanding of faculty needs, as they pertains to their family lives. Another way to interpret the results of the $t$-test is to assume that it is simply a Type 2 error that occurred as a result of a small sample size ($n=73$).

However, I think the most likely cause for this finding has to do with how STEM and non-STEM are defined in this study. In this study, STEM includes the nursing department and the department of psychology. Both of these departments consist of more
female faculty members than the engineering department, for example. This disparity likely influenced the results of the analyses between STEM and Non-STEM departments, where STEM appears to be more qualitatively similar to Non-STEM.

The second research question also dealt with supervisor support, asking if supervisor support can predict a work-family supportive culture. Rather than computing a simple regression, I conducted a multiple regression analysis that analyzed the four constructs that should theoretically “hang” together in predicting a work-family supportive culture. The results of that regression analysis are displayed in table 3.5. The model, which included work pressure, supervisor support, coworker support and work-family conflict as predictors of work-family culture, was found to be a very effective model for explaining work-family culture. Specifically, the model explained approximately 56% of the variance in work-family culture.

While this model has a large effect size (Cohen, 1988), it is important to bear in mind that 44% of the variation in work-family culture remains *unexplained* by the model – meaning that several other factors also contribute to what makes a professional culture a work-family supportive one. Examples of other factors that may contribute to work-family supportive culture include coworker support (which is also identified in the model) and leadership styles. Within the model, supervisor support was found to explain about 49% of the variance in work-family supportive cultures, which is considered a moderate effect size, edging on large. This finding is significant because it emphasizes the importance of leadership in *creating* a supportive environment for women in the Academy.
I was also able to identify, with correlation analysis, that psychological wellbeing is, in fact, related to how much work-family conflict mothers on campus experience. As previously mentioned, the work-family conflict scale was scored on a five-point Likert scale where one corresponded with “Very Often” and five corresponded with “Never”. Because these items were reverse coded, a low score on this scale indicated a high presence of work-family conflict, and a high score indicated low levels of work-family conflict. Psychological wellbeing and work-family conflict had a correlation coefficient of $r = .412$, which indicates that as work-family conflict increases psychological wellbeing decreases among faculty. This is significant because it verifies that work-family conflict is not only an issue for faculty at JMU, but that it is having a negative impact on their wellbeing.

Another significant finding of this study is that work pressure is positively related to work-family conflict, which means that as faculty experience more work pressure they also tend to report higher levels of work-family conflict. Work pressure was measured on a four-point Likert scale where a score of one meant, “Strongly Disagree” and a score of four meant, “Strongly Agree.” For example, if a participant said they “Strongly Agree” with the statement, “my job is very emotionally demanding and tiring,” it would correspond with a numerical score of 4.00. The average score on the work pressure scale was a 3.25, which roughly corresponds with “Agree”. This knowledge allows us to see that despite the fact that women in the academy are working in an environment where they have more flexibility, in their hours; for example, they are still under significant amounts of pressure.
The last significant finding of this study also relates to work pressure. Correlation analysis revealed that work pressure is significantly related to supervisor support. Specifically, the as supervisors become more supportive, faculty tend to experience less work pressure. This finding is significant because it, again, emphasizes the importance of the role of the supervisor. This study shows that supervisors have the power to impact how much pressure their colleagues experience, which in turn can predict how much work-family conflict they experience.

**Limitations**

There were a few limitations in this study. First, the population parameter was not an accurate reflection of the true parameter. James Madison University’s Office of Institutional Research (OIR) did not publish the 2015 - 2016 faculty data in time for me to reference it in this study. Therefore the population parameter reflects the 2014-2015 academic year. Additionally, the OIR does not report the percentage of instructional faculty that are mothers. So, I was faced with an interesting conundrum, I may have been underestimating the number of female instructional faculty due to the outdated data, but I also very likely overestimated the number of instructional faculty who are mothers.

Another limitation of this study was the omission of race and ethnicity from the demographic information collected in the survey. In this day and age it is imperative to address issues of race and ethnicity and acknowledge that this factor, alone, can have huge effects. For the purposes of this study, I chose to limit the scope and not specifically address race and ethnicity and the effects they might have on mothering experiences and work-family conflict.
Generalizability was also a substantial limitation in this study. As previously mentioned, JMU is a unique environment that is not representative of other institutions of higher education. Additionally, the response rate for this study was 15%, which falls below a “good” response rate. Similarly, response bias is always a concern when survey research methods are utilized. It is possible that the women who are truly overwhelmed simply did not have time to respond to the survey, which leaves them unrepresented. The low response rate also makes it unlikely that this data will be generalizable to the population. After deleting partially complete responses and male responses, there were 73 usable cases. This sample size may not have been large enough to see the effects of some variables, e.g., the t-test between STEM and non-STEM faculty and supervisor support. Lastly, the definition of STEM departments, which includes the department of psychology and nursing, likely impacted the analyses between STEM and Non-STEM groups.

**Implications of Study**

After analyzing and interpreting the data obtained from the survey instrument, it was clear that work-family conflict is not an issue isolated to the corporate sector. Women in the academy still report that they experience at least moderately high levels of work pressure and work-family conflict, despite the fact that family supportive policies are available for women. While this study did not produce any new phenomena, it is a valuable contribution to the literature on social supports as mediators for work-family conflict (Rousseau & Aube, 2010).
**Recommendations for Future Studies**

Future studies should continue to focus on identifying the presence of work-family conflict in instructional faculty who are mothers. However, it would be worthwhile to consider expanding studies to different contexts of higher education, as James Madison University is a unique environment that is not highly generalizable. If I were to expand on this study, I would expand the research design to include qualitative methods. The time that people spend away from their children to advance their career is an intimate and personal topic that could never be understood fully through statistics. Giving respondents the opportunity to tell their stories and explain their experiences would enrich this data and paint a more complete picture.

As previously mentioned, a limitation of this study was the lack of demographic information about race and ethnicity. Future studies should absolutely take this vital factor into account. Intersectionality of race and ethnicity and work-family conflict would likely provide additional insight about the experiences of faculty. This would also contribute to expanding the literature to include frequently “forgotten” members of the academy and society while discussing these issues.

**Conclusions**

They key findings from this study indicate that mothers in the academy—at least at James Madison University— are having similar experiences and challenges with the work-family continuum as women in the corporate sector. Historically, the literature on work-family conflict focused on mothers employed in corporate organizations, which created a significant gap in the literature. The academy may afford its professors more
easily accessible policies for work flexibility than in the corporate sector, but they arguably have more take-home work. This research can be used to inform future studies that examine additional factors that were outside the scope of this study – race and ethnicity, for example. This study contributes to the, now, flourishing area of research on women in the academy and the challenges they face.
Appendix A: Institutional Review Board (IRB) Protocol

James Madison University
Human Research Review Request

FOR IRB USE ONLY:
Exempt:  □  Protocol Number:  1st Review:  ______  Reviewer:  ______
Expedited:  □  IRB:  ______  2nd Review:  ______  Reviewer:  ______
Full Board:  □  Received:  ______  3rd Review:  ______

Project Title:  Work-Family Conflict and Well-Being in Mothers in Higher Education
Project Dates:
(Not to exceed 1 year minus 1 day)  
From:  11/15/15  To:  05/09/16

Minimum # of Participants:  10
Maximum # of Participants:  300

Funding:
External Funding:  Yes:  □  No:  ☑  If yes, Sponsor:  
Internal Funding:  Yes:  □  No:  ☑  If yes, Sponsor:  

Incentives:
Will monetary incentives be offered?  Yes:  □  No:  ☑
If yes:  How much per recipient?  In what form?  

Must follow JMU Financial Policy:  

Responsible Researcher(s):
Brittany Sierra Bilodeau
E-mail Address:  Bilodeau@dukes.jmu.edu
Telephone:  (703) 555-2872
Department:  Adult Education/Human Resource Development
Address (MSC):  6913

Please Select:
☑ Faculty  ☐ Undergraduate Student
☐ Administrator/Staff Member  ☑ Graduate Student

If Applicable:
Research Advisor:  Dr. Noorjahan Brantmeier
E-mail Address:  Brantmeier@jmu.edu
Telephone:  (540) 568-4530
Department:  Adult Education/Human Resource Development
Address (MSC):  6913

Investigator:  Please respond to the questions below. The IRB will utilize your responses to evaluate your protocol submission.

1. ☑ YES  ☐ NO  Does the James Madison University Institutional Review Board define the project as research?
   The James Madison University IRB defines "research" as a "systematic investigation designed to develop or contribute to generalizable knowledge." All research involving human participants conducted by James Madison University faculty and staff and students is subject to IRB review.

2. ☑ YES  ☐ NO  Are the human participants in your study living individuals?
   "Individuals whose physiological or behavioral characteristics and responses are the object of study in a research project. Under the federal regulations, human subjects are defined as: living individual(s) about whom an investigator conducting research obtains: (1) data through intervention or interaction with the individual; or (2) identifiable private information."

3. ☑ YES  ☐ NO  Will you obtain data through intervention or interaction with these individuals?

☒ YES  ☐ NO  Does your research involve both of the above?

☒ YES  ☐ NO  Does your research involve neither of the above?

☒ YES  ☐ NO  Does your research involve one of the above? (check one)

☒ YES  ☐ NO  Will your research involve any of the following?
   - Data collection through intervention or interaction
   - Collection or use of private information

☒ YES  ☐ NO  Will your research involve any of the following?
   - Data collection through intervention or interaction
   - Collection or use of private information

☒ YES  ☐ NO  Will your research involve any of the following?
   - Data collection through intervention or interaction
   - Collection or use of private information

☒ YES  ☐ NO  Will your research involve any of the following?
   - Data collection through intervention or interaction
   - Collection or use of private information
4. ☐ YES ☐ NO Will you obtain identifiable private information about these individuals?

"Private Information" includes information about behavior that occurs in a context in which an individual can reasonably expect that no observation or recording is taking place, or information provided for specific purposes which the individual can reasonably expect will not be made public (e.g., a medical record or student record). "Identifiable" means that the identity of the participant may be ascertained by the investigator or associated with the information (e.g., by name, code number, pattern of answers, etc.).

5. ☐ YES ☐ NO Does the study present more than minimal risk to the participants?

"Minimal risk" means that the risks of harm or discomfort anticipated in the proposed research are not greater, considering probability and magnitude, than those ordinarily encountered in daily life or during performance of routine physical or psychological examinations or tests. Note that the concept of risk goes beyond physical risk and includes psychological, emotional, or behavioral risk as well as risks to employability, economic well-being, social standing, and risks of stigmatization, shame, or criminal liability.

CERTIFICATIONS:

For James Madison University to obtain Federal Wide Assurance (FWA) with the Office of Human Research Protection (OHRP), U.S. Department of Health & Human Services, all research staff working with human participants must sign this form and receive training in ethical guidelines and regulations. "Research staff" is defined as persons who have direct and substantive involvement in proposing, performing, reviewing, or reporting research and includes students fulfilling these roles as well as their faculty advisors. The Office of Research Integrity maintains a roster of all researchers who have completed training within the past three years.

Test module at ORI website http://www.ori.org/researchintegrity/irs/iristraining.shtml

<table>
<thead>
<tr>
<th>Name of Researcher(s) and Research Advisor</th>
<th>Training Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brittany Sierra Biliaudeau</td>
<td>09/01/2013</td>
</tr>
<tr>
<td>Dr. Noorjahan Kesley Brantmeier</td>
<td>9/19/2013</td>
</tr>
</tbody>
</table>

For additional training interests, or to access a Spanish version, visit the National Institutes of Health Protecting Human Research Participants (PHRP) Course at: http://crnp.nihtraining.com/users/login.php.

By signing below, the Principal Investigator(s), and the Faculty Advisor(s) (if applicable), certifies that he/she is familiar with the ethical guidelines and regulations regarding the protection of human research participants from research risks. In addition, he/she agrees to abide by all sponsor and university policies and procedures in conducting the research. He/she further certifies that he/she has completed training regarding human participant research ethics within the last three years.

Brittany Biliaudeau

Principal Investigator Signature

11/17/15

Date

Principal Investigator Signature

Date

Principal Investigator Signature

11/17/15

Faculty Advisor Signature

Date
Submit an electronic version (in a Word document) of your ENTIRE protocol to researchintegrity@jmu.edu.

Provide a SIGNED hard copy of the Research Review Request Form to:

Office of Research Integrity, MSC 5738, 501 University Boulevard, Blue Ridge Hall, Third Floor, Room # 342

Following are the components for a complete research protocol. Please use this template to complete your protocol for submission. Each category must be addressed in order to provide the IRB sufficient information to approve the research activity. Please use as much space as you need, but adhere to the overall 10-page limitation.

For additional detail on each category, see: http://www.jmu.edu/researchintegrity/irb/irbsubmit.shtml

Purpose and Objectives

Please provide a lay summary of the study. Include the purpose, research questions, and hypotheses to be evaluated. (Limit to one page)

The primary purpose of this study is to explore the wellbeing and perceived level of work-family conflict and of instructional faculty at James Madison University who are mothers. Research questions include, 1) Is psychological wellbeing lower in female instructional faculty who are mothers? 2) Does age of child impact psychological wellbeing in female instructional faculty who are mothers? 3) Are levels of perceived work-family conflict higher in female instructional faculty who are mothers? 4) Do female instructional faculty have different attitudes towards family leave policies based on motherhood status? 5) Does number of children predict perceived fairness of family leave policy? 6) Does motherhood status impact perceived supervisory support in female instructional faculty? 7) Does number of children predict psychological wellbeing? 8) Does number of children predict perceived levels of work-family conflict? 9) Does number of children predict perceived fairness of family leave policy? 10) Does motherhood status impact perceived supervisory support in male instructional faculty? 11) Are there differences in perceived supervisory support in female instructional faculty in STEM versus Non-STEM colleges?

My hypotheses are that 1) instructional faculty members who are mothers will have lower psychological wellbeing scores than non-mothers, 2) instructional faculty with children below the age of 5 will have lower psychological wellbeing scores than non-mothers and mothers of children above the age of 5, 3) Instructional faculty who are mothers will have higher scores on the work-family conflict scale than non-mothers, 4) Instructional faculty who are non-mothers will have lower scores on the family leave fairness scale than instructional faculty who are mothers, 5) The number of children an instructional faculty member has will predict scores on the family leave policy fairness scale, 6) Motherhood status will predict scores on the supervisory support scale, 7) The number of children an instructional faculty member has will predict psychological wellbeing, 8) The number of children an instructional faculty member has will predict work-family conflict scores, 9) Instructional faculty with instructional faculty who are mothers will have lower scores on the supervisory support subscale than non-mothers, 10) Instructional faculty who are mothers in STEM departments will have lower scores on the supervisory support subscale than mothers in non-STEM departments.

Procedures/Research Design/Methodology/Timeframe

Describe your participants. From where and how will potential participants be identified (e.g., class list, JMU bulk email request, etc.)?

Pending IRB approval, I will deploy a Qualtrics survey through email to all female instructional faculty that are employed at JMU – both full-time and part-time. A copy of the survey can be found in Appendix A. Approximately 300 professors will be invited to complete the survey. They survey will be active for approximately 2 months. Reminder emails will be sent if response rate is low.

The participants in this study will be female instructional faculty who are employed by the university. Although the primary population of interest is instructional faculty at JMU who are mothers, women who are not mothers will also be allowed complete the survey. Participants will be identified through JMU's
bulk email request filters — this will allow the researcher to only send surveys to professors who are women.

How will subjects be recruited once they are identified (e.g., mail, phone, classroom presentation)? Include copies of recruitment letters, flyers, or advertisements.

Participants will be recruited to participate in the study through the use of JMU's bulk email system. I will submit a bulk mail request form that will target all female instructional faculty employed by the university. Additionally, I will contact department heads requesting that they distribute the Qualtrics Survey link amongst their department to female faculty in order to maximize response rate.

Describe the design and methodology, including all statistics, in detail. What exactly will be done to the subjects? If applicable, please describe what will happen if a subject declines to be audio or video-taped.

For the current study, participants will be asked to complete a survey. The survey consists of four demographic questions and three scales. A consent form will precede the scales. The researcher will be very transparent with our intent and procedures. The demographic questions on the survey are, 1) Faculty status, 2) College Affiliation, 3) Marital Status, 4) Age and number of children. The first scale is a 12-item scale psychological wellbeing scale (Chronbach’s Alpha=.934) from the BBC Subjective Well-being (BBC-SWB). The second scale is a 21-item work-family conflict measure that consists of four subscales, which are: Work pressure (Chronbach’s Alpha=.70), work-family culture (Chronbach’s Alpha=.71), supervisor support (Chronbach’s Alpha=.86), coworker support (Chronbach’s Alpha=.75), and work-family conflict (Chronbach’s Alpha=.87). The last scale is a parental leave policy fairness scale (Chronbach’s Alpha=.95).

In addition to calculating basic descriptive statistics, multiple ANOVAs and regression analysis will be computed to analyze the resulting survey data. Data management will be done from the researcher’s encrypted personal computer using SAS and SPSS software.

Emphasize possible risks and protection of subjects.

The researcher anticipates minimal risk to participants in this study. As previously described, participants will be contacted and invited to participate in the study through an email distributed by JMU bulk mail. The data will be confidential and stored only on Qualtrics’ database, and the researcher’s encrypted laptop to ensure participant confidentiality.

What are the potential benefits to participation and the research as a whole?

There will be no direct benefits to the participant for participating in the current study. However, in general, participation will aid the researcher in completing her master’s thesis. This project will help the researcher understand work-family conflict and wellbeing issues as they pertain to the JMU instructional faculty. This project will add to the literature regarding work-family conflict amongst women in higher education.

Will data be collected from any of the following populations?

- Minors (under 18 years of age), Specify Age: [ ]
- Prisoners [ ]
- Pregnant Women, fetuses, or neonates [ ]
- Cognitively impaired persons [ ]
- Other protected or potentially vulnerable population [ ]
- X, Not Applicable [X]
Where will research be conducted? (Be specific; if research is being conducted off of JMU’s campus a site letter of permission will be needed)

The data in the proposed study is survey data from a survey that will be administered through Qualtrics software. Participants will complete the survey in a location of their choosing at their convenience.

Will deception be used? If yes, provide the rationale for the deception. Also, please provide an explanation of how you plan to debrief the subjects regarding the deception at the end of the study.

Deception will not be used in this project.

What is the time frame of the study? (List the dates you plan on collecting data. This cannot be more than a year, and you cannot start conducting research until you get IRB approval)

I intend to deploy this survey on December 30, 2015 and plan to leave the survey active until February 1, 2016.

Data Analysis

For more information on data security, please see:

http://www.jmu.edu/researchintegrity/irb/irbdatasecurity.shtml

How will data be analyzed?

Survey data will be stored and analyzed on the researcher’s encrypted personal laptop using SPSS and SAS statistical analysis software. Using SAS, the researcher will score the scales according to each scale’s instruction. Descriptive statistics, frequency tables, ANOVAs and regression analyses will be calculated using SPSS. A consent form will precede the survey that participants take. The researcher will be very transparent with our intent and procedures.

The researcher only uses the computer the data will be stored on and is password protected. The survey data collection will include potentially identifiable information (i.e. faculty status, college, number of children, marital status), however this information will be kept confidential and store on the computer only accessible by the researcher.

How will you capture or create data? Physical (ex: paper or tape recording)? Electronic (ex: computer, mobile device, digital recording)?

As previously mentioned, the data will be collected in a Qualtrics survey that will distributed through email. This survey will likely be completed on a computer, but can be completed on any mobile device that has internet capabilities.

Do you anticipate transferring your data from a physical/analog format to a digital format? If so, how? (e.g. paper that is scanned, data inputted into the computer from paper, digital photos of physical/analog data, digitizing audio or video recording?)

The survey will be completed online and Qualtrics will store the data. The researcher will download the data to her encrypted computer for data analysis.

How and where will data be secured/stored? (e.g. a single computer or laptop; across multiple computers, or computing devices of JMU faculty, staff or students; across multiple computers both at JMU and outside of JMU)?

If subjects are being audio and/or video taped, file encryption is highly recommended. If signed consent forms will be obtained, please describe how these forms will be stored separately and securely from study data.
The researcher will do all data management and analysis on her personal laptop that is encrypted and only used by the researcher. A consent form is attached to the online survey, and subsequently there will be no paper copies of the consent form to secure.

Who will have access to data? (e.g., just me; me and other JMU researchers [faculty, staff, or students]; or me and other non-JMU researchers?)
The researcher will have access to the data as well as her thesis chair, Dr. Noorjehan Brantmeier.

If others will have access to data, how will data be securely shared?
The researcher's thesis chair will only have access to the data if the researcher shows her the data on her encrypted personal laptop.

Will you keep data after the project ends? (i.e., yes, all data; yes, but only de-identified data; or no) If data is being destroyed, when will it be destroyed, and how? Who will destroy the data?
The researcher has no plans of keeping the data beyond the project. After completion of her master's thesis the researcher will delete the survey and all records of the data from the Qualtrics account. Any data on the researcher's personal laptop will be permanently deleted as well.

Reporting procedures
Who is the audience to be reached in the report of the study?
The audience to be reached in the report of this study is the researcher's committee members, which consists of two graduate faculty members in the Adult Education/Human Resource Development program and one faculty member from the department of Psychology. The committee chair in this study is Dr. Noorjehan Brantmeier, Ph.D. The other two members of the committee are Dr. Diane Wilcox, Ph.D. and Dr. Natalie Kerr Lawrence Ph.D.

How will you present the results of the research? (If submitting as exempt, research cannot be published or publicly presented outside of the classroom. Also, the researcher cannot collect any identifiable information from the subjects to qualify as exempt.)
The results of this study will be presented to a Research Review Committee in a formalized classroom to the three aforementioned committee members through a "defense" of the research and the resulting findings. Additionally, this research will be presented at a Graduate Symposium in the spring of 2015.

How will feedback be provided to subjects?
The consent form that is presented at the beginning of the survey sent to participants, the researcher's and the committee chair's email address will be provided to allow participants the opportunity to provide feedback, ask questions regarding the study, as well as allow them to learn about the results of the study, if they desire.

Experience of the researcher (and advisor, if student):
Please provide a paragraph describing the prior relevant experience of the researcher, advisor (if applicable), and/or consultants. If you are a student researcher, please state if this is your first study. Also, please confirm that your research advisor will be guiding you through this study.

Brittany S. Bilodeau earned her Bachelor's of Science in Psychology from James Madison University. She is currently a graduate student in the Adult Education/Human Resource Development program at James Madison University. Additionally, she is a graduate assistant at the Center for Faculty Innovations where she works as the assistant to the coordinator of assessment. She has completed coursework in research methods, with a particular interest in quantitative methodology, as well as advanced psychological statistics.
Dr. Noorjeetan Brantmeier has a Ph.D. in Adult Education and Human Resource Studies with a specialization in research methods from Colorado State University. She has a master's degree in social work from Washington University in St. Louis where she conducted research on social and economic development in Native American communities. Dr. Brantmeier has been a principal investigator, co-principal investigator, and/or research coordinator on studies related to the measurement of student attitudes regarding diversity in higher education; youth civic engagement; and adolescent attitudes toward violence. She holds the rank of Graduate Faculty at JMU and teaches research methods courses at both the master's and doctoral levels.
Appendix B: Survey Instrument

Q73 Work-Family Conflict & Well-Being in Mothers in Higher Education

**Identification of Investigators & Purpose of Study**
The purpose of this study is to better understand the effect of having children on wellbeing and work-family conflict for women in higher education. This study will contribute to the completion of my master’s research.

**Research Procedures**
This study consists of an online survey that will be administered to individual participants through Qualtrics. You will be asked to provide answers to a series of questions related to your overall wellbeing, work-family balance, and attitudes towards family leave policies in institutions of higher education.

**Time Required**
Participation in this study will require 10-15 minutes of your time.

**Risks**
The investigator perceives minimal or no risk from your involvement in this study (that is, no risks beyond the risks associated with everyday life).

**Benefits**
There are no direct benefits to participants. Potential benefits of the research as a whole include a better understanding of the effect that motherhood has on wellbeing and issues of work-family conflict in higher education for female instructional faculty.

**Confidentiality**
The results of this research will be presented to a faculty committee during the researcher’s Master’s thesis defense. While individual responses are anonymously obtained and recorded online through the Qualtrics software, data are kept in the strictest
confidence. No identifiable information will be collected from the participant and no identifiable responses will be presented in the final form of this study. All data will be stored in a secure location only accessible to the researcher. At the end of the study, all records will be destroyed. Final aggregate results will be made available to participants upon request.

**Participation & Withdrawal**
Your participation is entirely voluntary. You are free to choose not to participate. Should you choose to participate, you can withdraw at any time without consequences of any kind. However, once your responses have been submitted and anonymously recorded you will not be able to withdraw from the study.

**Questions about the Study**
If you have questions or concerns during the time of your participation in this study, or after its completion or you would like to receive a copy of the final aggregate results of this study, please contact:

Brittany Bilodeau  
Adult Education/Human Resource Development  
James Madison University  
Bilodebs@dukes.jmu.edu

Dr. Noorie Brantmeier  
Adult Education/Human Resource Development  
James Madison University  
Telephone: (540) 568-4530  
brantmnk@jmu.edu

Questions about Your Rights as a Research Subject  
Dr. David Cockley
Chair, Institutional Review Board
James Madison University
(540) 568-2834
cocklede@jmu.edu

Giving of Consent
I have been given the opportunity to ask questions about this study. I have read this consent and I understand what is being requested of me as a participant in this study. I certify that I am at least 18 years of age. By clicking on the link below, and completing and submitting this anonymous survey, I am consenting to participate in this research.

Q67 Please indicate your faculty status:
○ Adjunct / Part-Time (1)
○ Instructor (2)
○ Assistant Professor (3)
○ Associate Professor (4)
○ Full Professor (5)

Q70 Please select your college affiliation below:
○ College of Arts & Letters (1)
○ College of Business (2)
○ College of Education (3)
○ College of Health and Behavioral Sciences (4)
○ College of Integrated Science and Engineering (5)
○ College of Science and Mathematics (6)
○ College of Visual and Performing Arts (7)
○ Libraries & Educational Technologies (8)

Q72 Please indicate your marital status:
○ Single (1)
○ Married / Domestic Partnership (2)
○ Divorced / Widowed (3)
Q77 Please indicate which gender you most identify with

- Male (1)
- Female (2)
- Other (Please Specify) ____________________

Q73 Please indicate the number of children in each age group for whom you are responsible.

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<thead>
<tr>
<th></th>
<th>None (1)</th>
<th>One (2)</th>
<th>Two (3)</th>
<th>Three (4)</th>
<th>Four or More (5)</th>
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<td>12 - 17 years</td>
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<td>18 + years</td>
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Q75 The following items will ask several questions regarding your experiences balancing your work and home life. Please read each statement or question and select the choice that best reflects your answer.

Q35 My job requires that I work very hard.

- Strongly Disagree (1)
- Disagree (2)
Q36 My job is very emotionally demanding and tiring.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

Q37 Thinking about your main job, how often have you felt overwhelmed by how much you had to work in the last 3 months? Would you say very often, often, sometimes, rarely, or never?

- Very Often (1)
- Often (2)
- Sometimes (3)
- Rarely (4)
- Never (5)

Q38 And how often in the past 3 months have you been asked by your supervisor or manager to do excessive amounts of work? Would you say very often, often, sometimes, rarely, or never?

- Very Often (1)
- Often (2)
- Sometimes (3)
- Rarely (4)
- Never (5)

Q39 There is an unwritten rule at my place of employment that you can’t take care of family needs on company time.

- Strongly Disagree (1)
Q40 At my place of employment, employees who put their family or personal needs ahead of their jobs are not looked on favorably.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

Q41 If you have a problem managing your work and family responsibilities, the attitude at my place of employment is: “You made your bed, now lie in it!”

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

Q42 At my place of employment, employees have to choose between advancing in their jobs or devoting attention to their family or personal lives.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

Q43 My supervisor is fair and doesn’t show favoritism in responding to employees’ personal or family needs.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
Q44 My supervisor accommodates me when I have family or personal business to take care of—for example, medical appointments, meeting with child’s teacher, and so forth.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

Q45 My supervisor is understanding when I talk about personal or family issues that affect my work.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

Q46 I feel comfortable bringing up personal or family issues with my supervisor.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

Q47 My supervisor really cares about the effects that work demands have on my personal and family life.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

Q48 I feel I am really a part of the group of people I work with.
Q49 I have the support from coworkers that I need to do a good job.

Q50 I have support from coworkers that helps me to manage my work and personal or family life.

Q56 In the past 3 months, how often:

Q51 Have you not had enough time for yourself because of your job?

Q52 Have you not had enough time for your family or other important people in your life because of your job?
Q53 Have you not had the energy to do things with your family or other important people in your life because of your job?
- Often (2)
- Sometimes (3)
- Rarely (4)
- Never (5)

Q54 Have you not been able to get everything done at home each day because of your job?
- Very Often (1)
- Often (2)
- Sometimes (3)
- Rarely (4)
- Never (5)

Q55 Have you not been in as good a mood as you would like to be at home because of your job?
- Very Often (1)
- Often (2)
- Sometimes (3)
- Rarely (4)
- Never (5)
Q74 The items in this section attempt to measure how happy you feel generally in most parts of your life. Please select the response that best describes your experience.

Q1 Do you feel depressed or anxious?
- Not at all (1)
- A little (2)
- Moderately (3)
- Very much (4)
- Extremely (5)

Q2 Do you feel able to enjoy life?
- Not at all (1)
- A little (2)
- Moderately (3)
- Very much (4)
- Extremely (5)

Q3 Do you feel you have a purpose in life?
- Not at all (1)
- A little (2)
- Moderately (3)
- Very much (4)
- Extremely (5)

Q4 Do you feel optimistic about the future?
- Not at all (1)
- A little (2)
- Moderately (3)
- Very much (4)
- Extremely (5)
Q5 Do you feel in control of your life?
- Not at all (1)
- A little (2)
- Moderately (3)
- Very much (4)
- Extremely (5)

Q6 Do you feel happy with yourself as a person?
- Not at all (1)
- A little (2)
- Moderately (3)
- Very much (4)
- Extremely (5)

Q7 Are you happy with your looks and appearance?
- Not at all (1)
- A little (2)
- Moderately (3)
- Very much (4)
- Extremely (5)

Q8 Do you feel able to live your life the way you want?
- Not at all (1)
- A little (2)
- Moderately (3)
- Very much (4)
- Extremely (5)

Q9 Are you confident in your own opinions and beliefs?
Q10 Do you feel able to do the things you choose to do?
Not at all (1)
A little (2)
Moderately (3)
Very much (4)
Extremely (5)

Q11 Do you feel able to grow and develop as a person?
Not at all (1)
A little (2)
Moderately (3)
Very much (4)
Extremely (5)

Q12 Are you happy with yourself and your achievements?
Not at all (1)
A little (2)
Moderately (3)
Very much (4)
Extremely (5)

Q76 The next nine items are about parental leave policy fairness. Please read the following statements and indicate your level of agreement below.
Q57 Paying faculty members for having babies is not fair to non-child-bearing faculty members
- Strongly Disagree (1)
- Disagree Somewhat (2)
- Disagree a Little (3)
- Neither Agree Nor Disagree (4)
- Agree a Little (5)
- Agree (6)
- Strongly Agree (7)

Q59 Every parent deserves the right to paid leave when a child is born.
- Strongly Disagree (1)
- Disagree Somewhat (2)
- Disagree a Little (3)
- Neither Agree Nor Disagree (4)
- Agree a Little (5)
- Agree (6)
- Strongly Agree (7)

Q60 It is everyone's, including nonparents', responsibility to provide for children, and a parental leave policy helps to accomplish this task.
- Strongly Disagree (1)
- Disagree Somewhat (2)
- Disagree a Little (3)
- Neither Agree Nor Disagree (4)
- Agree a Little (5)
- Agree (6)
- Strongly Agree (7)

Q61 It is not the university's responsibility to provide paid time off to new parents.
Q62 Having a child is a strain on parents, and they deserve the aid of parental leave.

Q63 Children are a necessary part of society and it is the responsibility of large institutions like state universities to help in the effort.

Q64 Those who choose not to have children should subsidize those who chose to have children under a parental leave program.
Q65 In the past, faculty have borne children without benefit of special leave, and therefore it is not fair to offer parental leave to new parents.

Q66 Having a baby is a personal choice and provisions for that event should be made by the family, rather than by the employer.
Appendix C: Work Pressure, Workplace Social Resources, and Work Family Conflict Scale

Work Pressure, Workplace Social Resources, and Work-Family Conflict Measures

Items

**Work pressure**
1. My job requires that I work very hard.
2. My job is very emotionally demanding and tiring.
3. Thinking about your main job, how often have you felt overwhelmed by how much you had to do at work in the last 3 months? Would you say very often, often, sometimes, rarely, or never?
4. How often in the past 3 months have you been asked by your supervisor or manager to do excessive amounts of work? Would you say very often, often, sometimes, rarely, or never?

**Work-family culture**
1. There is an unwritten rule at my place of employment that you can’t take care of family needs on company time.
2. At my place of employment, employees who put their family or personal needs ahead of their jobs are not looked on favorably.
3. If you have a problem managing your work and family responsibilities, the attitude at my place of employment is: “You made your bed, now lie in it!”
4. At my place of employment, employees have to choose between advancing in their jobs or devoting attention to their family or personal lives.

**Supervisor support**
1. My supervisor is fair and doesn’t show favoritism in responding to employees’ personal or family needs.
2. My supervisor accommodates me when I have family or personal business to take care of—for example, medical appointments, meeting with child’s teacher, and so forth.
3. My supervisor is understanding when I talk about personal or family issues that affect my work.
4. I feel comfortable bringing up personal or family issues with my supervisor.
5. My supervisor really cares about the effects that work demands have on my personal and family life.

**Coworker support**
1. I feel I am really a part of the group of people I work with.
2. I have the support from coworkers that I need to do a good job.
3. I have support from coworkers that helps me to manage my work and personal or family life.

**Work-family conflict**
In the past 3 months, how often
1. have you not had enough time for yourself because of your job?
2. have you not had enough time for your family or other important people in your life because of your job?
3. have you not had the energy to do things with your family or other important people in your life because of your job?
4. have you not been able to get everything done at home each day because of your job?
5. have you not been in as good a mood as you would like to be at home because of your job?

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Appendix D: BBC Wellbeing Scale

The BBC Well-being scale

This questionnaire attempts to measure how happy you feel generally in most parts of your life. Select the response that best describes your experience.

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<th></th>
<th>Not at all</th>
<th>A little</th>
<th>Moderately</th>
<th>Very much</th>
<th>Extremely</th>
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<tbody>
<tr>
<td>1. Are you happy with your physical health?</td>
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<td>2. Are you happy with the quality of your sleep?</td>
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<td>3. Are you happy with your ability to perform daily living activities?</td>
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<td>4. Do you feel depressed or anxious?</td>
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<td>5. Do you feel able to enjoy life?</td>
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<td>6. Do you feel you have a purpose in life?</td>
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<td>7. Do you feel optimistic about the future?</td>
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<td>8. Do you feel in control of your life?</td>
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<td>9. Do you feel happy with yourself as a person?</td>
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<td>10. Are you happy with your looks and appearance?</td>
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<td>12. Are you confident in your own opinions and beliefs?</td>
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<td>13. Do you feel able to do the things you choose to do?</td>
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<td>15. Are you happy with yourself and your achievements?</td>
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<td>16. Are you happy with your personal and family life?</td>
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<td>17. Are you happy with your friendships and personal relationships?</td>
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<td>18. Are you comfortable about way you relate connect with others?</td>
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<td>19. Are you happy with your sex life?</td>
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<td>20. Are you able to ask someone for help with a problem?</td>
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<td>21. Are you happy that you have enough money to meet your needs?</td>
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<td>22. Are you happy with your opportunity for exercise/nature?</td>
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<td>23. Are you happy with access to health services?</td>
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<td>24. Are you happy with your ability to work?</td>
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Appendix E: Policy Fairness Scale

Policy Fairness Scale

Items

1. Paying faculty members for having babies is not fair to non-child-bearing faculty members.

2. Every parent deserves the right to paid leave when a child is born.

3. It is everyone’s, including nonparents’, responsibility to provide for children, and a parental leave policy helps to accomplish this task.

4. It is not the university’s responsibility to provide paid time off to new parents.

5. Having a child is a strain on parents, and they deserve the aid of parental leave.

6. Children are a necessary part of society and it is the responsibility of large institutions like state universities to help in the effort.

7. Those who choose not to have children should subsidize those who choose to have children under a parental leave program.

8. In the past, faculty have borne children without benefit of special leave, and therefore it is not fair to offer parental leave to new parents.

9. Having a baby is a personal choice and provisions for that event should be made by the family, rather than by the employer.

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doi:http://dx.doi.org/10.1016/j.orgdyn.2009.02.003


