Productivity and Leadership Patterns of Female Faculty Members in Public Administration

Meghna Sabharwal

School of Economic, Political and Policy Sciences
The University of Texas at Dallas

Abstract
Though the number of female faculty members has risen in public administration programs throughout the nation, few studies have analyzed the advances made by them at universities and colleges. The most commonly used method of examining success in academic settings is by analyzing the research productivity patterns of faculty members. However, evaluation should not be limited to measuring publication productivity alone, but also through measuring gender equity in leadership positions. Thus the purpose of this research is to analyze the scholarly output and leadership patterns of faculty members in fields of public administration and policy by gender. The study uses data from the Survey of Doctorate Recipients to examine career trajectories and 241 schools offering degrees in public administration, affairs, policy, and management listed on the NASPAA website to examine leadership patterns by gender. The results suggest that female faculty members have lower productivity despite controlling for demographic, institutional, and career factors. However, when interaction terms are introduced between female faculty and ages of children, the productivity gap by gender disappears.

According to the United States Department of Labor statistics, women comprise close to half of the active labor workforce in this country (46.8% in 2008). The number is expected to rise by 2018. The unemployment rate for women in 2009 was 2.1 percentage points lower than for men. Despite these encouraging statistics, the public administration field continues to grapple with issues facing women. A few commonly cited challenges include glass ceiling, glass walls, sticky floors, job segregation, job compression, pay inequities, and gender

Keywords: research productivity, gender, public administration faculty, diversity
stereotypes. One scholar (Guyot, 2008) argues that the glass ceiling is a factor of demand and supply and that greater numbers of women are in appointed compared with elected positions. Guyot suggested, “Glass implies a smooth surface, while the barrier to women’s advance in government is uneven, as wavy as a fun-house mirror” (p. 529). Thus there is a clear indication of challenges that women continue to face in the workforce. This study examines the advancements made by women in an area that is neglected in the public administration literature with specific reference to scholarship and leadership.

The most common method of evaluating success in universities is by assessing the contributions made by faculty members to the knowledge base of the field, and publications are used as a barometer to judge faculty effectiveness (Farber, Powers, & Thompson, 1984; Forrester, 1996; Kellough & Pitts, 2005; Rodgers & Rodgers, 2000). Other methods often used by researchers to measure progress in the fields of public administration and policy are (a) investigating the theoretical development (Adams, 1992; Box, 1992); (b) assessing the quality of research in the discipline (Cozzetto, 1994; Houston & Delevan, 1990, 1994; Kraemer & Perry, 1989; Stallings & Ferris, 1988; Wright, Manigault, & Black, 2004); (c) ranking of public administration, affairs, and policy programs (W. Adams, 1983; Morgan et al., 1981; Morgan & Meier, 1982); (d) examining the quality of dissertations (G. Adams & White, 1994; R. Cleary, 1992, 2000; McCurdy & Cleary, 1984; White, 1986); (e) assessing graduate productivity (Brewer et al., 1999; Douglas, 1996); and (f) measuring gender equity (Durbin, Ospina, & Schall, 1999; Rubin, 1990, 2000).

The dominant theme of this research is to analyze the scholarly output and leadership patterns of faculty members in fields of public administration and policy by gender. This study attempts to answer these research questions: (a) How do faculty members in public administration and policy differ across personal, institutional, and career factors by gender? (b) Are there differences in scholarly publication rates of male and female faculty members? (c) Are there differences in the leadership patterns of academic faculty in public administration and policy based on gender? While there are several studies in science and engineering that measure research productivity of faculty members by gender, public administration as a discipline is devoid of such studies. The motivation for this study partly arises from the existing lack of knowledge on this subject, but more importantly it aims to assess the current standing of female faculty members in regards to research productivity and leadership. To examine the association between productivity and leadership by gender, the following sections review the literature in three main areas (a) gender as it relates to personal and work factors; (b) gender as it relates to research productivity; and (c) gender and leadership.
BACKGROUND LITERATURE

Gender as It Relates to Personal and Work Factors

Underrepresentation of female faculty members in academia has received much attention in several disciplines—especially science and engineering. In the field of public administration, the most recent literature has found that female faculty members have made advances, but they still lack parity in rank, tenure, salary, and scholarly productivity (Hale, 1999; Mani, 2001; Rubin, 1990, 2000; Sabharwal, 2010; Slack, Myers, Nelson, & Sirk, 1996). Slack et al. (1996) found that women in public administration were twice as likely to be in junior-ranking positions as compared with men, creating differences in publication rates. A similar pattern is reported by researchers in other disciplines (Long & Fox, 1995; Menges & Exum, 1983; Smart, 1991; Toutkoushian, 1999; Weiler, 1990). Why is it important to have representation of female faculty members in public administration and policy programs? Apart from the fact that female faculty members bring demographic diversity to the workplace, they bring diverse perspectives creating an environment that reflects society as a whole (Oldfield, Candler, & Johnson III, 2006). Further, some evidence suggests that female faculty members are more likely to serve in nurturing and advising roles than male faculty members (Allen, 1994; A. Astin, Korn, & Lewis, 1991) because they feel a special responsibility to cater to the needs of female students and students of color (Park, 1996).

However, female faculty members are confronted with several challenges, as highlighted by Hale (1999). One of the participants, a university professor in a public administration program, commented on the challenges female faculty members encounter while going up for promotion.

My wife is a faculty member…[who] can't get promoted. The question of why I could get promoted with no questions, with probably less credentials…and she [with] more credentials…can't get promoted, bothers me…In that sense, I think the academic world is much harder. The glass ceiling is much more difficult to break. (Hale, 1999, p. 415)

Overall, the study pointed to various gender inequities that continue to persist at work: the lack of dialogue and open exchange on issues relating to socialization experiences, personal and family life, sexuality and power, and so on, creating barriers and fortifying existing stereotypes held by both genders.

While other researchers have argued that the lag is at least partially due to marriage and family obligations, Long, Allison, & McGinnis (1993) concluded that female faculty members who shoulder child-rearing duties took a longer time to advance up the academic ladder when compared to men with children. On the other hand, Hargens & Long (2002) explained the slower growth of women in higher levels of the academy by a theory of demographic inertia. They argue that the age and sex structure of a field can severely limit women’s representation in
tenure-track and full professor positions. Others have argued that the lower representation of women among tenured faculty is due to the differences in human capital, structural characteristics, and research productivity (Perna, 2001).

Aggregation of female faculty members in lower-ranking positions further leads to discrepancies in salaries. Researchers in various disciplines including public administration have found that female faculty members earn less than male faculty (Barbezat, 1988; Bellas, 1994; Levin & Stephan, 1998; Perna, 2003; Slack, et al., 1996; Weiler, 1990). Institutionally, female faculty members are less likely to be hired at a Carnegie I or II research university when compared with male faculty members (Fassinger, Scantlebury, & Richmond, 2004; Long & Fox, 1995) and thus are less likely to spend time on research related activities. Drawing on the evidence presented, the study makes the following hypotheses.

Hypothesis 1: Female faculty members in public administration and policy programs are more likely to be in junior-ranking positions as compared to male faculty members.

Hypothesis 2: Female faculty members in public administration and policy are less likely to be employed at research universities than male faculty, and thus are less likely to spend their time in research-related activities.

Research Productivity by Gender

Publications are used as a vital evaluation tool in academia to make promotion and tenure decisions (Bellas & Toutkoushian, 1999; Xie & Shauman, 1998; Zamarripa, 1993). Departments with highly productive faculty not only help advance the knowledge base but also act as catalysts in the socialization process of graduate students into academic culture (Kraemer & Perry, 1989). Productive faculty members serve as a motivational force for students who wish to advance their graduate careers (Brewer et al., 1999; Douglas, 1996). Productive faculty members also are likely to be better teachers because they bring their research into the classroom. Research and teaching should not be divorced from each other; in fact one can reinforce the other (Fairweather, 2002). However, increased time spent on teaching is shown to negatively affect the time spent on research (Bellas & Toutkoushian, 1999; M. Fox, 1992).

Only a handful of studies in public administration have thus far analyzed the research productivity of faculty by gender (Condit & Hutchinson, 1997; Rubin, 1990, 2000; Slack et al., 1996). Although most of the studies on gender and productivity are more than a decade old, a more recent study found female faculty in the field of public administration and policy to be less productive in terms of research publications when compared with male faculty members (Corley & Sabharwal, 2010). Similar findings were reported in other disciplines (Astin, 1969; Bellas & Toutkoushian, 1999; Cole & Singer, 1991; Cole & Zuckerman, 1984; Corley, 2005; M. Fox, 2005; Levin & Stephan, 1998; Long & Fox, 1995; Pfeffer & Langton, 1993; Sonnert & Holton, 1995; Stack, 2004. Some scholars have demonstrated, however, that the difference in productivity levels between female
and male academics has declined in recent years (Kellough & Pitts, 2005; Sax, Hagedorn, Arredondo, & DiCrisi, 2002; Ward & Grant, 1996; Xie & Shauman, 1998). Kellough & Pitts (2005) reported women to have significantly higher acceptance rates in Public Administration Review (PAR), the premier journal in the discipline (41% vs. 31%). The same study found opposite results for minority faculty—the acceptance rates in PAR for minority faculty members was disproportionately lower when compared with white faculty members.

In addition, some studies have established an association between productivity levels and personal characteristics like marital status and parenthood (Astin & Davis, 1985; Clark & Corcoran, 1986; Cole & Zuckerman, 1984; Mason & Goulden, 2004; Stack, 2004). However, many of these scholars disagree about the direction of the relationship between productivity levels and marriage or parenting variables for female faculty. Some studies have found a positive influence of marriage and children on faculty productivity (Astin & Davis, 1985; Clark & Corcoran, 1986; Cole & Zuckerman, 1984; Xie & Shauman, 1998). Yet, others have shown that marriage and children negatively affect research productivity among female faculty members (Mason & Goulden, 2004; Sonnert & Holton, 1995; Stack, 2004). Stack (2004) provided a detailed analysis of faculty research productivity in various disciplines. The author found that among social scientists, women with younger children (aged 2–11) were disadvantaged in relation to their research productivity due to childbearing and child-rearing responsibilities, findings that contradicted results of another study done by M. Fox & Faver (1985). The presence of older children (18 and above) had no effect on productivity by gender.

Mason & Goulden (2004) found that women with children under the age of 6 are least likely to secure tenure-track positions. Though it could be argued that female faculty members with children are self-selecting out of tenure-track jobs, past studies have indicated that female faculty members are far less likely to be hired at research universities (Fassinger et al., 2004; Long & Fox, 1995). Female faculty members in tenure-track jobs report spending greater amounts of their time in teaching and service-related activities (Allen, 1994; Banks, 1984; Bellas & Toutkoushian, 1999; Carr et al., 1998; Park, 1996). This is in part due to the perception that women are more caring than men and are hence more likely to be placed in mentoring roles. Women faculty members also are more likely to be asked to serve on university-wide committees to fulfill diversity and institutional goals (Garcia, 1974; Howe, 1980; Menges & Exum, 1983; Sandler, 1991). Thus, based on the past research, this study poses the following.

Hypothesis 3: Female faculty members in public administration and policy are likely to have lower publication productivity rates than male faculty members even after controlling for family and work-related factors.

Hypothesis 4: Female faculty members in public administration and policy with children in their preteen years are likely to have lower publication productivity rates than male faculty members.
Leadership Patterns by Gender

Leadership of female faculty in public administration and policy programs in the United States is an understudied area. Overwhelming evidence suggests that women in local, state, and federal government jobs are less likely to be present in high-ranking positions (Cornwell & Kellough, 1994; Guy, 1993; Guy & Newman, 2004; Harris, 2009; Hsieh & Winslow, 2006; Kellough, 1990; Kim, 1993; Kim & Lewis, 1994; Lee & Cayer, 1987; Naff, 2001; Purcell & Baldwin, 2003; Rivera & Ward, 2008; Selden & Selden, 2001). Currently, no studies are examining the role of female faculty members in positions of chairs or deans in public administration and related programs. Based on the overwhelming evidence suggesting that female faculty members are far less likely to be in senior ranking positions, this study poses the following hypothesis.

Hypothesis 5: Female faculty members in public administration and policy are less likely to be in positions of chair, department, or program heads when compared with male faculty.

Data and Methodology

Data for this study are taken from the 2003 Survey of Doctorate Recipients (SDR), which is nationally conducted and funded by the National Science Foundation (NSF) and the National Institutes of Health (NIH). The survey is conducted biennially. The latest wave 2006 SDR was not used for this research, because the productivity variables were omitted. Even though these data are old, the 2003 data set was chosen because it asks questions related to faculty research productivity that are not asked in the more recent 2006 survey.3

The sample consists of doctorate recipients with highest degrees in public administration or public policy studies. Individuals in the data are full-time academics working at four-year colleges or universities. Part-time faculty members and postdoctoral research fellows are not included in the sample, because the career trajectories of both these groups of individuals can be very different from full-time faculty members employed in four-year institutions. After filtering part-time faculty and postdoctoral researchers, the sample resulted in a total of 1,275 (weighted).

Individuals with a doctoral degree in public health were excluded because several of these faculty members have medical degrees resulting in divergent career trajectories, publication norms, and salary structures. The variables used from the SDR data set range from various demographic variables (such as gender, race, ethnicity, marital status, children status) to work-related factors (rank, tenure, Carnegie classification of the employer,4 primary work activity, salary, and research productivity of faculty members). The analysis was computed using the weighted variables created by NSF. Weights in this type of sample survey data are produced to make statistics more representative of the population. The weighted variable is defined as the reciprocal of the probability of selection under the sample design and is further adjusted for nonresponse. Data analyses are performed using an independent sample t-test of the aforementioned variables by gender. To control for the impact of gender on publishing, an ordinary least squares regression is computed.
The dependent variable used in this study is productivity, which is measured by the annual number of peer-reviewed scholarly articles published by individual faculty members from 1998 to 2003. The survey asked respondents to report the number of articles (co-)authored or accepted for publication in peer-reviewed journals since 1998, which is for a total of five years since the date of the survey (2003). Because not all faculty members have the entire five years to publish, annual rate of article productivity was computed. For those with highest degree granted in or before 1998, annual number of articles published was calculated as a measure of total articles between 2003 and 1998 divided by 5 years. For those with highest degree granted after 1998, annual number of articles published equals total articles between 2003 and 1998 divided by experience, which is calculated by subtracting the year of highest degree from the survey year 2003. Though these data are self-reported, past research has established high correlation between self-reported and indexed publications (Allison & Stewart, 1974; Cole & Zuckerman, 1984; M. Fox & Faver, 1985).

The model incorporates various control variables that are documented in the literature (Cole & Singer, 1991; M. Fox, 2005; Stack, 2004; Xie & Shauman, 1998). These include demographic variables like age, marital status, gender, and children. Also included are employer type, work activity, salary, and rank. Publication counts or “straight counts” are the most commonly used methods for assessing research productivity (Cole & Cole, 1973; Corley 2005; Lange, 2001; Lindsey, 1980; Morgan et al., 1981; Sabharwal & Corley, 2008). As the name suggests, straight counts measure the number of publications a researcher produces. This approach is occasionally treated as a quantification of the peer-review process, because each publication would have undergone the seal of approval through the expert judgment of peers (King, 1987; Melkers, 1993; Weingart, 2005). As a program evaluation tool, publication count can serve as an indicator of progress by estimating the number of publications per research dollar spent. The biggest drawback of this method is that, when used alone, it reveals only the quantity, not the quality of the publication produced (Melkers, 1993). Quantity and quality of publications are highly correlated, and research by Cole & Zuckerman (1984) showed a .50 to .75 correlation between publication and citation counts. This finding suggests that faculty members who are prolific publishers also heavily influence the research in the field by being cited by other authors. Thus the use of publication count can partly serve as a measure of quality.

To measure the leadership roles of faculty members in public administration and policy programs, this study gathered information featured on the National Association of Schools of Public Affairs and Administration (NASPAA) website. Data were collected for the 241 schools listed on the NASPAA website, and the names of directors and department heads were taken from the websites of individual schools. The names of various program heads were further coded for gender and Carnegie classification of the institution. Independent sample t-tests were employed to find differences in personal, career, and institutional characteristics by gender.
RESULTS

Gender as It Relates to Various Personal and Work Factors

Overall, close to 40% of the sample were female faculty members, and about 60% were male. The respondents hold various academic positions. Overall, close to one third of the faculty members are assistant professors (34%), followed by associate professors (24.4%), 22.5% full professors, and close to 10% in instructor positions and other (9.6%). An overwhelming majority of faculty members are white, non-Hispanic males. Female faculty members have higher representation among black, non-Hispanic, and Hispanic faculty. Overall, 77.5% of the respondents were white, non-Hispanic; 14.7% were black, non-Hispanic; 2.1% Hispanic, all races; and 5.6% were Asian. The t-test results (see Table 1) show a significant difference in the percentage of faculty employed in rank by gender. The results in Table 1 suggest that female faculty members are significantly younger and are less likely to be married or living in a marriage-like relationship as compared with male faculty (79% vs. 88%). Female faculty members in public administration and policy programs also are significantly less likely than male faculty to be present in full professor positions. The results verify the first hypothesis, that female faculty members are less likely to be in senior-ranking positions as compared with male faculty members in public administration and policy programs. The results also are in line with previous studies in public administration (Hale, 1999; Rubin, 1990, 2000; Slack et al., 1996).

Additionally, the mean difference between salaries by gender is significant at \( p < .001 \) using a t-test. Female faculty members on average are compensated approximately $10,000 less than male faculty, thus verifying past studies that found female faculty earn less than male faculty (Barbezat, 1988; Bellas, 1994; Hamermesh, 1993; Levin & Stephan, 1998; Perna, 2003; Slack et al., 1996; Weiler, 1990). The variation in salary also can be attributed to rank and tenure differences.

Results in Table 1 show that female faculty members are significantly \( p < .001 \) more likely to be employed at research institutions than male faculty members (48% female vs. 23% male). These findings are encouraging for female faculty members in public administration and policy given that research in other disciplines has indicated that female faculties are much less likely to be employed at research I or II universities (Fassinger et al., 2004; Long & Fox, 1995). Additionally, results in Table 1 also show that female faculty members were more likely (30%) than male faculty (16%) to report research and development as their primary work activity. This result is not surprising given the higher proportion of female faculty members in public administration and policy employed at research universities.

These findings are very different from studies that have reported female faculty members spend a greater proportion of their time in teaching and service-related activities when compared with time spent on research (Banks, 1984; Carr et al.,
1998). The results of this study are unable to verify the second hypothesis, which states that female faculty members in public administration and policy are less likely to be employed at research universities than male faculty, and thus are less likely to spend significant amounts of their time in research-related activities. Does increased time spent on research translate into increased publication productivity for women? To answer this question, the next section analyzes the research productivity of public administration and policy faculty by gender.

Table 1.
Differences in Personal, Institutional, and Career Characteristics by Gender

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(N = 1,275)</td>
<td>(N = 507, 39.8%)</td>
<td>(N = 768, 60.2%)</td>
</tr>
<tr>
<td></td>
<td>Total N</td>
<td>%</td>
<td>Total N</td>
</tr>
<tr>
<td>I. Personal Characteristics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Race/Ethnicity***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% White, non-Hispanic</td>
<td>985</td>
<td>77.5</td>
<td>350</td>
</tr>
<tr>
<td>Age**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean Age</td>
<td>1,275</td>
<td>46.7</td>
<td>507</td>
</tr>
<tr>
<td>Marital Status***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Married</td>
<td>1,073</td>
<td>84.1</td>
<td>399</td>
</tr>
<tr>
<td>% Children living with parents</td>
<td>807</td>
<td>63.3</td>
<td>326</td>
</tr>
<tr>
<td>(Not significant)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>II. Career Characteristics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rank*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Professor</td>
<td>286</td>
<td>22.5</td>
<td>99</td>
</tr>
<tr>
<td>Tenure Status***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Tenured</td>
<td>477</td>
<td>37.4</td>
<td>104</td>
</tr>
<tr>
<td>% Dean/academic chair position***</td>
<td>262</td>
<td>20.5</td>
<td>73</td>
</tr>
<tr>
<td>III. Institutional Characteristics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carnegie Classification of Employer***</td>
<td>422</td>
<td>33.1</td>
<td>244</td>
</tr>
<tr>
<td>% Research I/II</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Work Activity***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Research and development</td>
<td>273</td>
<td>21.4</td>
<td>151</td>
</tr>
<tr>
<td>Salary Mean***</td>
<td>1,275</td>
<td>71,595</td>
<td>507</td>
</tr>
</tbody>
</table>

Note. Difference of mean tests (t-test) are presented for female and male faculty members for personal, institutional, and career-related characteristics.

* p < .05; ** p < .01, *** p < .001
Research Productivity by Gender

To further analyze the productivity of faculty members by gender, an ordinary least squares regression was conducted, controlling for various personal, institutional, and career factors. The dependent variable used for this study is the annual number of peer-reviewed articles published. Table 2 provides the results of two regression models of research productivity and gender. Model 1 controls for various demographic, institutional, and career factors; Model 2 has various interactions with gender and age of children and gender and type of institution, in addition to the controls used in Model 1. The study found that Model 1 explained 67.6% of the variance in article productivity rates based on gender. The model used rank as a proxy for tenure and age due to problems with multicollinearity. The current model has very low variance inflation factors (all below 10) and tolerance levels greater than .1, indicating no problems with multicollinearity in the model.

The results in Model 1 suggest that female faculty members publish 0.6 fewer articles annually than their counterparts after controlling for factors like marital status, race/ethnicity, ages of children, employer institution type, faculty rank, salary, and primary work activity. The findings are consistent with prior research on scholarly productivity of public administration faculty by gender (Rubin, 1990, 2000; Slack et al., 1996). Additionally, this research found that faculty members belonging to Asian and Hispanic race/ethnic groups were more productive compared with white, non-Hispanic public administration faculty, which is different from the finding of Kellough and Pitts (2005), who reported that faculties of color have lower submission and acceptance rates in PAR.6

As expected, there was a direct relationship between working at a research university and scholarly productivity. The effects of location were similarly confirmed by Stack (2004) in his study on publications and gender productivity across disciplines. The resources available to faculty members at a research university such as graduate teaching assistants, doctoral students for collaboration on research, reduced teaching loads, start-up funds, and research monies for travel to conferences and workshops, for example, help with increasing research productivity when compared with faculty members at a liberal arts or a comprehensive institution who might not have such resources and opportunities available. Faculty who reported spending a major proportion of their time on research-related activities rather than management and administration had a higher number of articles published annually in refereed journals. Spending more time on teaching-related activities led to higher research productivity. These results contradict studies that report an inverse relationship between time spent on teaching and research (Bellas & Toutkoushian, 1999; M. Fox, 1992; Olsen, Maple, & Stage, 1995).

Assistant professors were more productive than full professors in public administration. These findings contradict past research that shows lower
productivity among junior faculty members (Baldwin & Blackburn, 1981; Bonzi, 1992; Latif & Grillo 2001; Olsen et al., 1995; Smart, 1990). These studies found that younger faculty members are more likely to spend a large proportion of their time on teaching-related activities, which affects their scholarly productivity in a negative way.

The findings in this study suggest that publication productivity of faculty members with children of any age is lower than faculty members without children—a factor that negatively affects female productivity rates as compared to male faculty members who have young children and who have reported higher publication and tenure rates (Ginther & Kahn, 2006; Stack, 2004). The most common explanation offered in the literature to explain lower productivity among female faculty members is the presence of children (Carr et al., 1998; Kyvik & Teigen, 1996; Sax et al., 2002; Stack, 2004). To explore this factor further, several interaction terms are introduced between gender and ages of children in the second model, the results of which are presented in Table 2.

The difference in research productivity by gender disappears when several interaction terms between female faculty and ages of children, and female faculty and type of employer, are introduced. This partially confirms Hypothesis 3, which suggests that female faculty have a lower publication rate as compared with male faculty members. When controlling for institutional, career, and demographic factors, Hypothesis 3 holds up (Model 1). However, when additional controls are added (i.e., interaction terms between female faculty members and ages of children and type of employer), the relationship between gender and publication productivity becomes insignificant. In other words, men and women do not publish at varying rates when interactions between ages of children, institution type, and female faculty members are factored into the regression equation. The lower research productivity of female faculty reported in Model 1 disappears with the addition of various interaction terms in Model 2. To conclude that women faculty members are less productive than male faculty members might be misleading without taking children and institution type into consideration. The results thus confirm Hypothesis 4 that female faculty members in public administration and policy with children in their preteen years are likely to have lower publication productivity rates than male faculty members.

While the remaining relationships (race/ethnicity, marital status, employer type, and primary work activity) are the same as in Model 1, the impact of rank on research productivity is different. In Model 2, full professors are the most productive when compared with assistant and associate professors. Full professors publish approximately one full article more than associate professors annually, while the gap is much lower for assistant professors. Overall, Model 2 explains 83.9% of the variance in research productivity, which is an additional 16.3% of the variance when compared with Model 1.
Table 2.  
*Relationship between Annual Article Productivity and Gender*

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Model 1 Unstd. Coefficients</th>
<th>Model 2 Unstd. Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1.638***</td>
<td>1.593***</td>
</tr>
<tr>
<td><strong>I. Personal Characteristics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>−.596***</td>
<td>.159 (NS)</td>
</tr>
<tr>
<td><strong>Race/Ethnicity</strong> (White, non-Hispanic serves as the Reference Group)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian, non-Hispanic</td>
<td>.918***</td>
<td>1.037***</td>
</tr>
<tr>
<td>Black, non-Hispanic</td>
<td>−.643***</td>
<td>−1.551***</td>
</tr>
<tr>
<td>Hispanic all races</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Marital Status</strong> (Married serves as the Reference Group)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never Married</td>
<td>−.767***</td>
<td>−2.375***</td>
</tr>
<tr>
<td>Divorced and separated</td>
<td>.082 (NS)</td>
<td>−.053 (NS)</td>
</tr>
<tr>
<td>Children aged 2–5 living with parents</td>
<td>−1.349***</td>
<td>−.553***</td>
</tr>
<tr>
<td>Children aged 6–11 living with parents</td>
<td>−.549***</td>
<td>1.424***</td>
</tr>
<tr>
<td>Children aged 12–18 living with parents</td>
<td>−.119 (NS)</td>
<td>.187*</td>
</tr>
<tr>
<td>Children aged 19 and older living with parents</td>
<td>.331**</td>
<td>1.284***</td>
</tr>
<tr>
<td><strong>II. Institutional Characteristics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Carnegie Classification of Employer</strong> (Research I/II serves as the Reference Group)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctoral I/II</td>
<td>−1.466***</td>
<td>−2.662***</td>
</tr>
<tr>
<td>Comprehensive I/II</td>
<td>−1.243***</td>
<td>−1.434***</td>
</tr>
<tr>
<td>Liberal Arts I/II</td>
<td>−1.758***</td>
<td>−2.429***</td>
</tr>
<tr>
<td><strong>Primary Work Activity</strong> (Research and development serves as the Reference Group)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teaching</td>
<td>.221*</td>
<td>.129*</td>
</tr>
<tr>
<td>Management and Administration</td>
<td>−.347*</td>
<td>−2.655***</td>
</tr>
<tr>
<td>Other</td>
<td>.953***</td>
<td>.711***</td>
</tr>
<tr>
<td>Salary</td>
<td>1.534E-6</td>
<td>6.011E-6***</td>
</tr>
<tr>
<td><strong>III. Career Characteristics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Rank</strong> (Professor serves as the Reference Group)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>.598***</td>
<td>−.226*</td>
</tr>
<tr>
<td>Associate Professor</td>
<td>−.134*</td>
<td>−.912***</td>
</tr>
</tbody>
</table>
Leadership Patterns by Gender

A systematic examination of gender patterns among 241 schools offering degrees in public administration, affairs, policy, and management listed on the NASPAA website revealed that women are half as likely as men to be in leadership roles as department heads and chairs (33% vs. 67%). Further analysis of leadership patterns by gender and type of institution are presented in Table 3.

Table 3.
Leadership Patterns by Type of Institution and Gender of Public Administration/Policy/Management Faculty

<table>
<thead>
<tr>
<th>Carnegie Classification</th>
<th>Female (N = 79, 32.8%)</th>
<th>Male (N = 162, 67.2%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total N</td>
<td>%</td>
<td>Total N</td>
</tr>
<tr>
<td>Research University Very High and High</td>
<td>35</td>
<td>44.3</td>
</tr>
<tr>
<td>Doctoral Research Universities</td>
<td>8</td>
<td>10.1</td>
</tr>
<tr>
<td>Master’s Large/Medium/Small Programs</td>
<td>33</td>
<td>41.8</td>
</tr>
<tr>
<td>Baccalaureate Colleges</td>
<td>3</td>
<td>3.8</td>
</tr>
</tbody>
</table>

Note. The difference in means (t-test) are not significant for the various categories of universities by gender.
Though the results are not statistically different, the percentage of female faculty members holding leadership positions in research I/II universities is lower than that for male faculty. Institutions classified as Master’s (small/medium/large) and Baccalaureate had higher percentages of women in positions of academic chair as compared to the percentages of male faculty members. Overall, the results indicate that public administration as a discipline has certainly progressed over the years, but considerable work remains to be done before women can achieve parity with men in leadership positions (Rubin, 2000).

**Discussion and Conclusion**

The purpose of this research was to measure faculty research productivity and advancement by gender. To date, none of the studies have empirically analyzed the gender differences in research productivity of public administration and policy faculty. Past studies on faculty productivity in public administration have taken a narrow view on productivity by assessing the number of publications in the premier journal of the discipline—*Public Administration Review (PAR)*. Public administration as a discipline is very interdisciplinary; thus, using *PAR* as the sole publication outlet to capture productivity patterns might be misleading. This study adds to that literature by using a national database that accounts for all refereed articles published by individual authors over a span of five years. However, these data are limited, because they do not distinguish between sole authored or coauthored or multiple authored articles, or quality of published articles (all are peer-reviewed, but journal impact factor is not available), and are self-reported. Another limitation is that the data used for this study are dated. Since such a survey is not conducted by NASPPA/ASPA, the current study relies on the best available data set that captures faculty productivity and career trajectory. Future studies can use more recent 2008 SDR data to examine productivity patterns by gender.

The study finds female faculty members in public administration or public policy are less likely to be senior-ranking positions. Does this indicate some form of academic glass ceiling that some of these previous studies have indicated? Since a majority of female faculty members are younger than male faculty, and close to 40% ($N = 199$) were not in tenure-track positions (or tenure was not applicable), it is difficult to make outright claims of discriminatory practices in decisions of hiring and promotion. It is not clear whether the presence of women in low-ranking positions is due to certain barriers confronted by women, or because they have entered academia much later than men, or perhaps a combination of these factors. This issue should be explored in future studies with the use of longitudinal data and interviews.

Women in public administration and policy are being hired at a higher rate in research universities and report spending greater proportion of their time on research-related activities when compared with male faculty members who are more likely to be hired at doctoral, comprehensive, and liberal arts colleges. The results are thus unable to confirm Hypothesis 2 and are certainly reflective of the
positive steps institutions have made in hiring female faculty. Despite being hired at higher rates in research universities and spending greater proportions of their time in research-related activities, women respondents in Model 1 report lower productivity than male faculty members (controlling for various personal, institutional, and career factors). This could be for several reasons. Firstly, data in Table 1 suggests that very few female faculty members hold senior-ranking positions in public administration and policy programs, resulting in fewer mentoring opportunities for young female faculty members. Women are more likely to seek female mentors with whom they feel most comfortable and with whom they are able to self-identify (R. Fox & Schuhmann, 2001; Guy, 1993; Ragins & Cotton, 1999). Guy (1993, p. 290) asserted that “women benefit from having male mentors, they also need mentors who have successfully forded the barriers that confront women but which men may not even be aware exist.” Mentoring by senior faculty can result in research collaborations, which in turn can increase faculty publication rates (Slack et al., 1996). Secondly, lower productivity of female faculty members might be a result of choices these faculty members make in selecting outlets for their research. A recent study conducted by Corley & Sabharwal (2010) suggests that although women in public administration publish fewer articles than men, they are likely to publish in high-impact journals. Quality might be paramount to female faculty members rather than quantity of publications.

However, the results in Model 2 are different from Model 1, in which no difference in publication productivity is found between male and female faculty members. Contrary to popular belief that female faculty members are less productive than male faculty (Bellas & Toutkoushian, 1999; Cole & Zuckerman, 1984; Cole & Singer, 1991; Corley, 2005; M. Fox, 2005; Levin & Stephan, 1998; Long & Fox, 1995; Pfeffer & Langton, 1993; Sonnert & Holton, 1995; Xie & Shauman, 1998), the current study finds that the productivity gap disappears when ages of children and institution type are taken into consideration. Female researchers with children ages 11 and younger publish fewer articles than men; however, the greatest negative impact is reported by female faculty members with children in their preteen years (6 to 11), thus confirming Hypothesis 4. The results are consistent with previous research in other fields of study (Hochschild, 1997; Stack, 2004). Thus the productivity gap reported in Model 1 is not a function of innate and intellectual differences in female scholars’ ability to publish, but rather a function of family- and work-related factors. Women often times are disproportionately in caregiving roles, thus creating a gender role deficit that helps explain why women publish less when compared with their male colleagues. The challenge of balancing work and child care responsibilities can take time away from scholarship. The results of this study can help university policy makers recognize the importance of family-friendly policies that can cater to the needs of women faculty, especially those with younger children.

These results should be interpreted with caution since the sample included only full-time faculty members, and the analysis does not control for time spent by
faculty members on mentoring/advising students or community outreach activities, which are common pursuits among public administration scholars. Activities relating to advising and mentoring are often disproportionately carried out by female faculty members (Allen, 1994; Banks, 1984; Bellas and Toutkoushian, 1999; Carr et al., 1998; Park, 1996). Despite opportunities available to female faculty members (in most institutions) to stop their tenure clock during the birth or adoption of a child, some women scholars do not choose this option due to the fear of unfavorable reviews they might receive at the time of tenure or promotion (Ropers-Huilman, 2003). There are currently no studies on this issue in the public administration literature. Future studies could further investigate whether similar patterns emerge for female faculty members teaching and researching in public administration programs.

The results in Table 1 using the SDR data suggest that women are significantly less likely to be in dean and administrative positions. Using the NASPPA data, the current study finds higher percentages of female in leadership positions in schools offering master’s and baccalaureate programs than in research and doctoral universities. More research is required to understand institutional differences that lead to varying patterns of leadership roles among female faculties. Past studies have attributed this gap to differences in leadership style among men and women leaders: Men emphasized a quid pro quo approach focusing on self-interest, while women were found to meet the needs and expectations of their followers (Dominici, Fried, & Zeger, 2009). In addition, a few studies suggest that women currently in leadership roles are often not appreciated for their achievements and lack the much-needed support and encouragement from senior leaders or peers (Dominici et al., 2009; Greenhaus & Parasuraman, 1993). However, the most common deterrent cited for the lack of women in leadership roles is the exclusion from informal networks and the lack of mentorship opportunities provided to them (Chliwniak, 1997; Dominici et al., 2009; Niemeier & González, 2004). Most of these studies are conducted in science and engineering, a field that is documented to have a hostile environment for female faculty in general. Social science, on the contrary, is perceived as being free of such hostilities due to higher proportions of women in disciplines like psychology and sociology.

Another important finding reported in this study is that increased time spent in teaching does not lower the publication productivity of faculty members, which is contrary to previous reports on this subject (Bellas & Toutkoushian, 1999; M. Fox, 1992; Olsen et al., 1995). The results help dispel the notion that teaching is divorced from research. In fact, both these activities are mutually reinforcing in advancing the scholarship of public administration faculty. Assessing scholarly productivity in academia should not be an end in itself, but rather a means to creating an inclusive environment that promotes diversity and equal opportunity. Universities need to recognize what is working and do away with what is not, and continue to promote equitable environments by valuing diversity in all its forms.
Footnotes

1. The use of NSF data does not imply NSF endorsement of the research methods or conclusions contained in this report.

2. For more details on the current state of women in public administration (public, private, and nonprofits), see Women in Public Administration: Theory and Practice (2010), edited by Mario J. D’Agostino and Helisse Levine. This book expounds on the role women have played in public service, and it informs theory and practice of women public administrators from a gendered perspective.

3. The NSF survey is biennial. In 2006, NSF did not ask research productivity-related questions; instead, it focused on international collaborations and postdoctoral issues. NSF reintroduced productivity-related questions in the most recent 2008 survey. The author has requested access to NSF’s 2008 SDR restricted data.

4. The data reported are for the 2003 SDR, which uses the old Carnegie Classification system that includes the following categories: Research I/II, Doctoral I/II, Comprehensive I/II, Liberal Arts I/II, two-year colleges, and specialized institutions. The new classification system that came into effect in 2005 no longer uses I and II designations. However, since these data are from 2003, the old classification system is pertinent.

5. The NASPAA data are current and thus use the newer Carnegie classification system, which includes these categories:
   1. Doctoral Granting Universities that further are classified into RU/VH: Research Universities (very high research activity), RU/H: Research Universities (high research activity), and DRU: Doctoral/Research Universities
   2. Master’s Colleges and Universities: Master’s/L: Master’s Colleges and Universities (larger programs) Master’s/M: Master’s Colleges and Universities (medium programs), Master’s/S: Master’s Colleges and Universities (smaller programs)
   3. Baccalaureate Colleges: Bac/A&S: Baccalaureate Colleges—Arts & Sciences, Bac/Diverse: Baccalaureate Colleges—Diverse Fields, Bac/Assoc: Baccalaureate/Associate’s Colleges
   4. Associate’s Colleges: have 14 different sub-classifications of all colleges offering two-year degrees
   5. Special Focus Institutions
   6. Tribal Colleges

6. Direct comparisons with Kellough and Pitt’s (2005) study are hard to make, because their research analyzed the submission and publication rates in PAR and did not compute scholarly productivity across other journals.

References


Productivity and Leadership of Female Faculty


Lange, L. L. (2001). Citation counts of multi-authored Papers—First-named authors and further authors. Scientometrics 52(3), 457–470.


Dr. Meghna Sabharwal is an assistant professor in the Public Affairs Program in the School of Economic, Political and Policy Sciences at the University of Texas at Dallas. Her research interests are focused on workforce policy as it relates to job satisfaction, productivity, diversity, and comparative human resource issues. Dr. Sabharwal’s work is published in academic journals such as *Public Administration, Review of Public Personnel Administration, Research Policy, Social Science Journal,* and *Government Information Quarterly* among others.